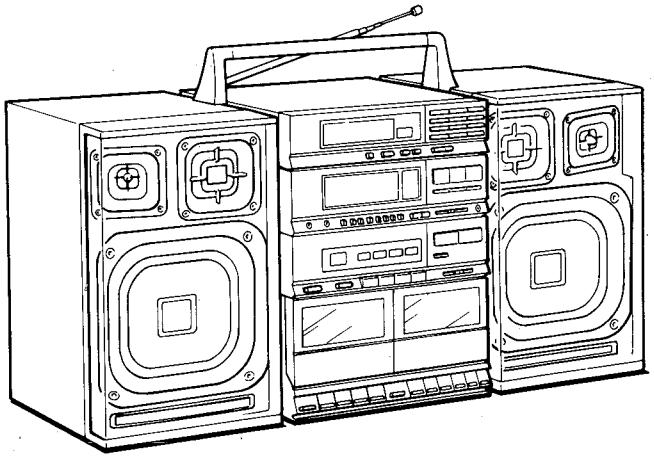
FH-211W

SERVICE MANUAL

AEP Model



'Dolby' and the double-D symbol are the trade marks of Dolby laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

• FH-211W consists of ST-211, TA-211, TC-211W, APM-215.

CONTENTS

FH-211W

	Page
MODEL IDENTIFICATIONS	3
SPECIFICATION	4
FEATURES	5
NOTE ON LITHIUM BATTERY	5
CONNECTOR'S SIGNAL ASSIGNMENT	6
FUNCTION OF CONTROLS	7
EXPLODED VIEW AND PARTS LIST	9

ST-211

	Page
• LITHIUM BATTERY	
• NOTE ON CERAMIC FILTER (CF101, 102) REPLACEMENT AND DIODE D314, 315 CONNECTION	ST-1
SECTION 1 ADJUSTMENTS	ST-2
SECTION 2 DIAGRAMS	ST-5
2-1. MOUNTING DIAGRAM	ST-5
2-2. SCHEMATIC DIAGRAM	ST-7
SECTION 3 EXPLODED VIEW AND PARTS LIST	ST-11

—Continued on page 2—

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MICROFILM

COMPACT HI-DENSITY COMPONENT SYSTEM

SONY®

AUD

TA-211

		Page
SECTION 1	DIAGRAMS	
1-1.	MOUNTING DIAGRAM	TA-5
1-2.	SCHEMATIC DIAGRAM	TA-9
SECTION 2	EXPLODED VIEWS AND PARTS LIST	TA-13
SECTION 3	ELECTRICAL PARTS LIST	TA-15

TC-211W

		Page
REPAIRING PRECAUTION		TC-1
SECTION 1	ADJUSTMENTS	TC-2
1-1.	MECHANICAL ADJUSTMENTS	TC-2
1-2.	ELECTRICAL ADJUSTMENTS	TC-3
SECTION 2	DIAGRAMS	TC-8
2-1.	MOUNTING DIAGRAM	TC-8
2-2.	SCHEMATIC DIAGRAM	TC-11
SECTION 3	EXPLODED VIEWS AND PARTS LIST	TC-15
SECTION 4	ELECTRICAL PARTS LIST	TC-17

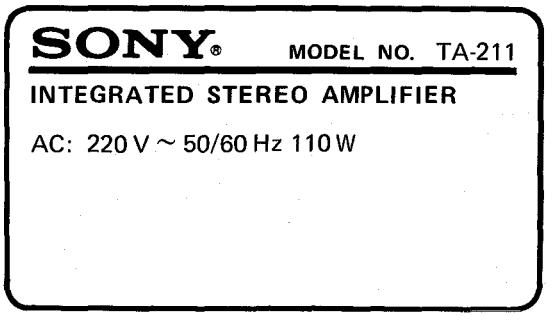
APM-215

	Page
1. DISASSEMBLY	APM-1
2. WIRING DIAGRAM	APM-1
3. EXPLODED VIEW AND PARTS LIST	APM-2

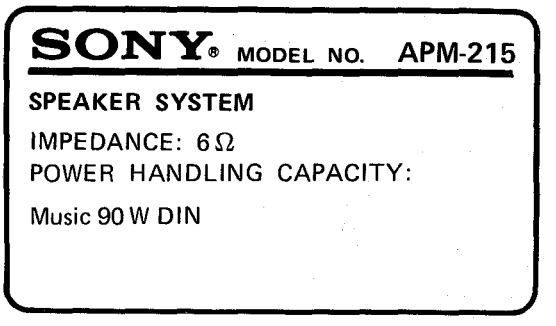
MODEL IDENTIFICATION

– Specification Label –

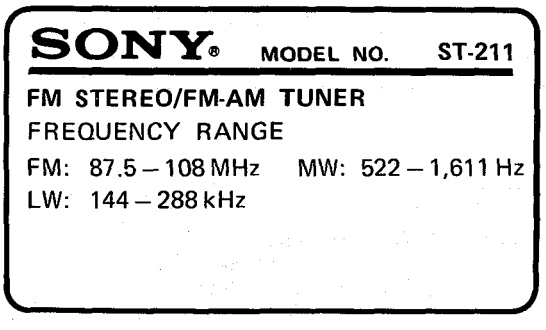
TA-211



APM-215



ST-211



SPECIFICATIONS

ST-211 Tuner

System: FM stereo, FM/AM superheterodyne tuner
Quartz-locked PLL digital synthesizer system

FM tuner section

Tuning range: 87.5 - 108 MHz
Antenna: Telescopic antenna
Antenna terminals: 75 ohms unbalanced
Intermediate frequency: 10.7 MHz
Usable sensitivity: 2.3 μV (S/N = 30 dB/75 ohms)
Signal-to-noise ratio: 78 dB (mono), 70 dB (stereo)
Harmonic distortion at 1 kHz: 0.2% (mono), 0.5% (stereo)
Separation at 1 kHz: 40 dB
Selectivity at 400 kHz: 55 dB
at 300 kHz: 35 dB

MW/LW tuner section

		MW	LW
Tuning range		522 - 1,611 kHz	144 - 288 kHz
Antenna		Built-in ferrite bar antenna External antenna terminal	
Intermediate frequency		450 kHz	
Usable sensitivity	Built-in ferrite bar antenna	250 μV/m (999 kHz)	500 μV/m (230 kHz)
	External antenna	100 μV (999 kHz)	150 μV (230 kHz)
Signal-to-noise ratio		52 dB (50 mV/m)	
Harmonic distortion		0.3% (50 mV/m, 400 Hz)	

Dimensions: Approx. 215 × 55 × 240 mm (w/h/d)
(8 1/2 × 2 1/4 × 9 1/2 inches)
incl. projecting parts and controls
Weight: Approx. 0.9 kg (2 lb) net

TC-211W Cassette deck

Recording system: 4-track 2-channel stereo
Frequency response:
DOLBY NR OFF (DIN)
with TYPE II cassette (Sony UCX-S)
60 - 14,000 Hz (± 3 dB)
with TYPE I cassette (Sony HF-S)
60 - 13,000 Hz (± 3 dB)
Wow & flutter: 0.1% WRMS
± 0.3% (DIN)
Dimensions: Approx. 225 × 120 × 230 mm (w/h/d)
(8 7/8 × 4 3/4 × 9 1/8 inches)
Weight: Approx. 2.1 kg (4 lb 11 oz) net

TA-211 Amplifier

Continuous RMS power output
45 + 45 watts
(6 ohms, at 1 kHz, 5% THD)
35 + 35 watts
(6 ohms, 40 Hz - 20 kHz, 1% THD)
Music power: 160 W (6 ohms)

Inputs

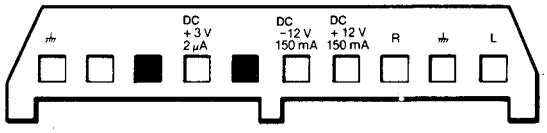
	Sensitivity	Impedance
PHONO (phono jacks)	2.5 mV	50 kilohms
CD/AUX (phono jacks)	450 mV	50 kilohms
MIC (minijack)	1 mV	low impedance

Outputs

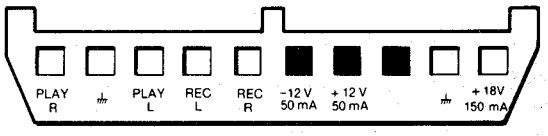
PHONES (stereo-minijack)	Accepts headphones of 8 ohms or more
SPEAKER	Accepts speakers of 6 to 16 ohms

Frequency response
PHONO: RIAA curve ± 0.5 dB
CD/AUX: 40 Hz - 30 kHz +0 -3 dB
MIC: 100 Hz - 10 kHz +0 -3 dB
Dimensions: Approx. 215 × 120 × 280 mm (w/h/d)
(8 1/2 × 4 3/4 × 11 1/8 inches)
incl. projecting parts and controls
Weight: Approx. 4.0 kg (8 lb 14 oz) net

10 pin DC output connector of TA-211 to ST-211



10 pin DC output connector of TA-211 to TC-211W



APM-215 Speaker

Speaker system: 3-way speaker system
Speaker units: Woofer: 134 cm² APM type
Tweeter: 5 cm dia. cone type
Super tweeter: 3.5 cm dia. ceramic type
Enclosure type: Bass reflex
Frequency range: 60 Hz - 20 kHz
Sensitivity: 88 dB/W/m
Impedance: 6 ohms
Dimensions: Approx. 175 × 290 × 220 mm (w/h/d)
(7 × 11 1/2 × 8 3/4 inches)
Weight: Approx. 3.3 kg (7 lb 5 oz) net per speaker

General

Power requirements
220 V AC, 50/60 Hz
Power consumption
110 W
Dimensions Approx. 585 × 355 × 280 mm (w/h/d)
(23⅛ × 14 × 11⅛ inches)
incl. projecting parts and controls
Weight Approx. 14.3 kg (31 lb 9 oz) net
Approx. 15.8 kg (34 lb 14 oz) in shipping carton
Accessories supplied
Carrying handle (1)
Mounting brackets (2)
Mounting screws (10)
Speaker cushions (4)

FEATURES

Compact hi-density component system
FH-211W consists of an FM stereo FM-AM tuner, a cassette deck and an integrated amplifier.

Tuner section
- Permits precise tuning of FM/MW/LW stations with the digital readout on the frequency display.
- A total of 20 stations of any band can be memorized in any sequence.
- Station scanning is possible with MEMORY SCAN.

Amplifier section
- A 7-band graphic equalizer with a spectrum analyzer for fine adjustment of tone quality for both recording and playback.
- DBFB (Dynamic Bass Feedback System) for obtaining sufficient bass sounds.

Cassette-deck section
- Relay play for playing both decks consecutively.
- Two synchro dubbing speeds available.

NOTE ON LITHIUM BATTERY

WARNING !!

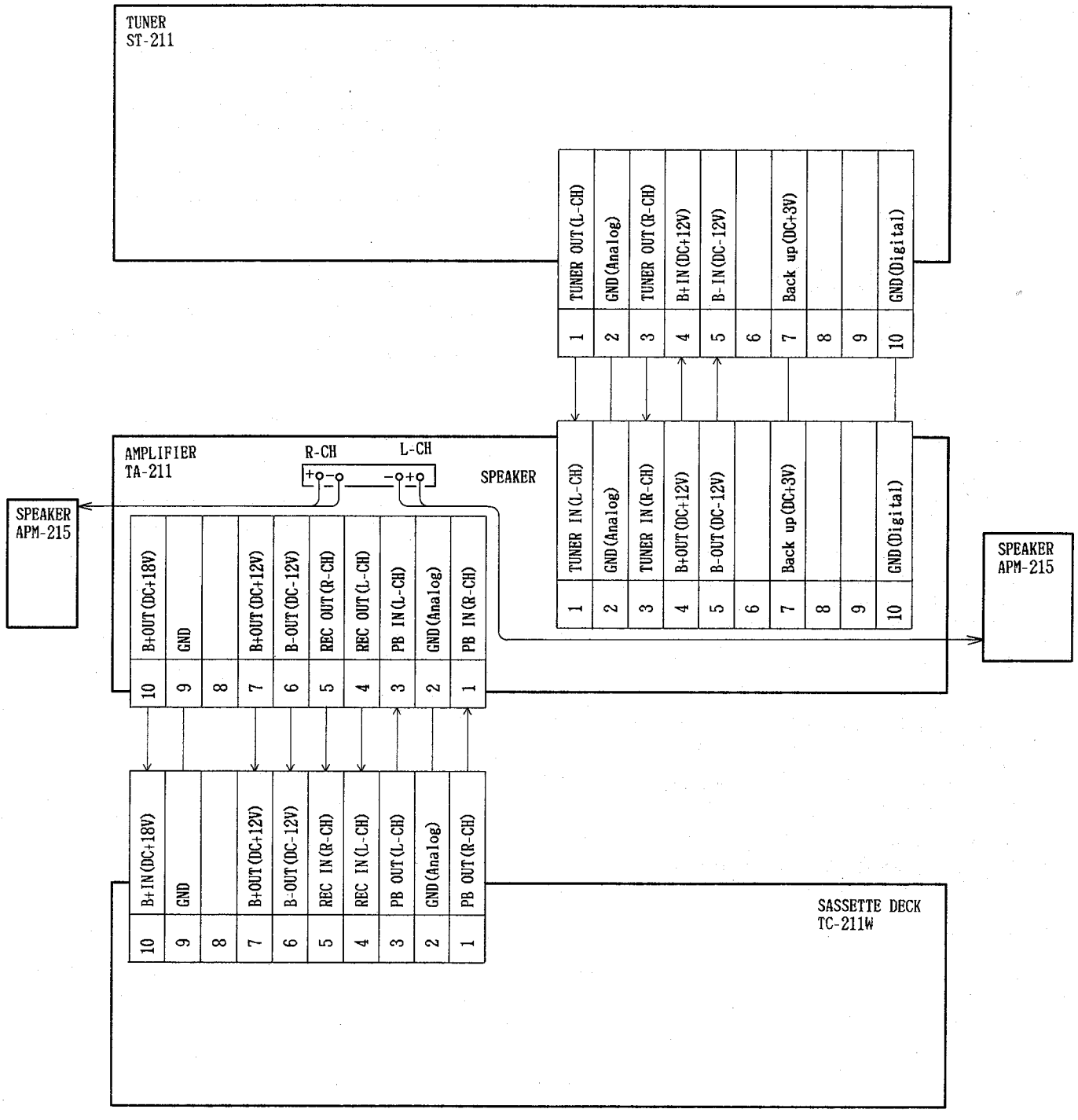
ADVARSEL!
Lithiumbatteri – Eksplosionsfare
Udskiftning må kun foretages af en sagkyndig, og som beskrevet i servicemanualen.

LITHIUM BATTERY
SHOULD ONLY BE CHANGED BY TECHNICAL PERSONNEL. THERE IS A RISK FOR EXPLOSION AT A WRONG HANDLING.

"Batteriet må kun udskiftes med et batteri af samme fabrikat og type".

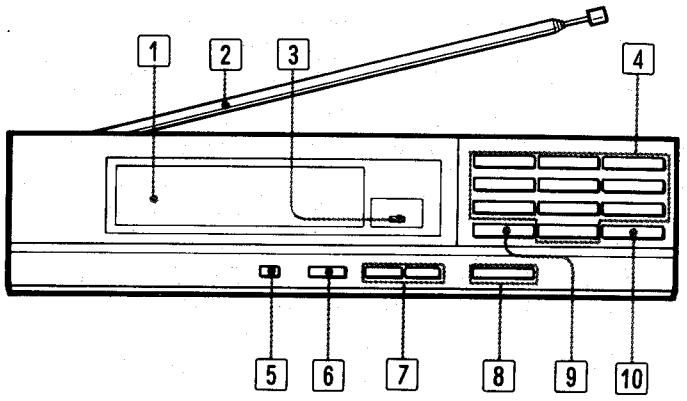
Because of the risk for explosion the battery must be replaced with the same type and manufacture.

CONNECTOR'S SIGNAL ASSIGNMENT



FUNCTION OF CONTROLS

ST-211 Tuner



1 Band/frequency display

2 Telescopic antenna

3 STEREO indicator

4 PRESET (10-key station preset) selectors

5 STEREO/MUTING switch
Normally keep this switch engaged to eliminate FM interstation noise while tuning from station to station. (The MUTING indication appears.)
Press to disengage when listening to the noisy FM stereo program. There is no stereo effect, but the reception will be improved.

6 BAND select button
Press to select the appropriate band. (FM→MW→LW)

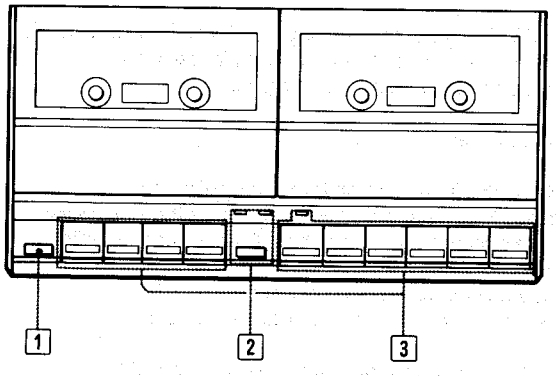
7 TUNING buttons
Use to change radio stations.
Press + to move to a higher frequency station.
Press – to move to a lower frequency station.
Hold the button down for continuous frequency change.

8 MEMORY SCAN button

9 MEMORY button

10 ENTER button
Completes station preset selections.

TC-211W Stereo cassette deck



1 DOLBY NR* (noise reduction) switch

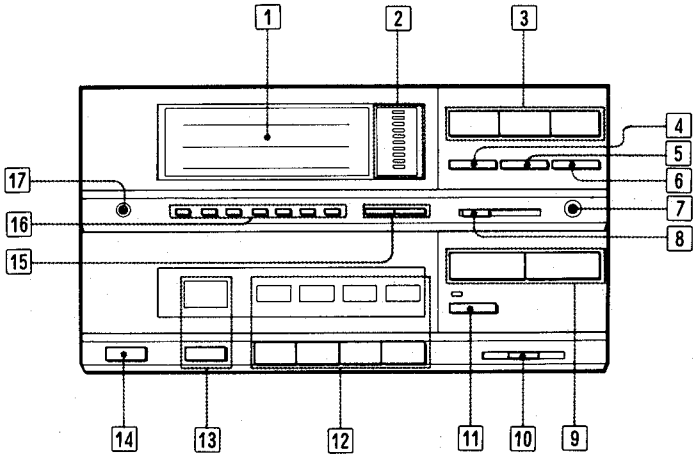
2 DUBBING SPEED select button and indicators

3 Tape operation buttons
- ▶ PLAY (play back) button
- ◀◀ REW (rewind) button
- ▶▶ FF (fast forward) button
- ■⏏ STOP/EJECT button
- ● REC (record) button and indicator
- ❚❚ PAUSE button

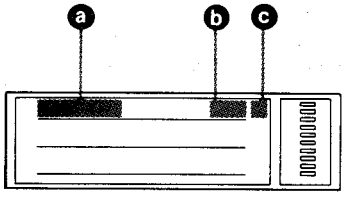
* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

TA-211 Amplifier



1 Display window



a SPECTRUM ANALYZER/GRAPHIC EQUALIZER display
Usually displays the SPECTRUM ANALYZER. When the DISPLAY button or any other equalizer control is pressed, it changes to the GRAPHIC EQUALIZER display.

SPECTRUM ANALYZER	The sound level in 7 bands is displayed.
GRAPHIC EQUALIZER	The equalizer adjustment setting is displayed.

b MEMORY indicator
Appears when the EQ MEMORY button is pressed.

c Equalizer preset number indicator
Shows the selected preset number of the graphic equalizer setting.

2 VOL LEVEL (volume level) indicator

3 EQ PRESET (equalizer preset) selectors
Press to select the preset number of the graphic equalizer setting.

4 DISPLAY button
Selects the display function; spectrum analyzer or graphic equalizer display.

5 EQ FLAT (flat equalization) switch
Press to listen without equalization.

6 EQ MEMORY (equalization memory) button
Press to memorize the graphic equalizer settings.

7 MIC (microphone) jack (minijack)

8 MIC LEVEL (microphone level) control
Slide toward MAX to increase the microphone input level, and towards MIN to decrease it.

9 VOLUME control buttons

10 BALANCE control
Changes the relative strength of right and left speaker output levels.

11 MUTING switch
Press to momentarily mute the sound by 20 dB. To disengage the button, press it again.

12 FUNCTION select buttons and indicators
TAPE: Press to listen to tapes.
CD: Press to listen to or to record from compact discs or auxiliary sources.
TUNER: Press to listen to or to record radio programs.
PHONO: Press to listen to or to record from phonograph records.

13 DBFB (Dynamic Bass Feed Back) button and indicator
Depress to reinforce bass sound in playback. To disengage the button, press it again.

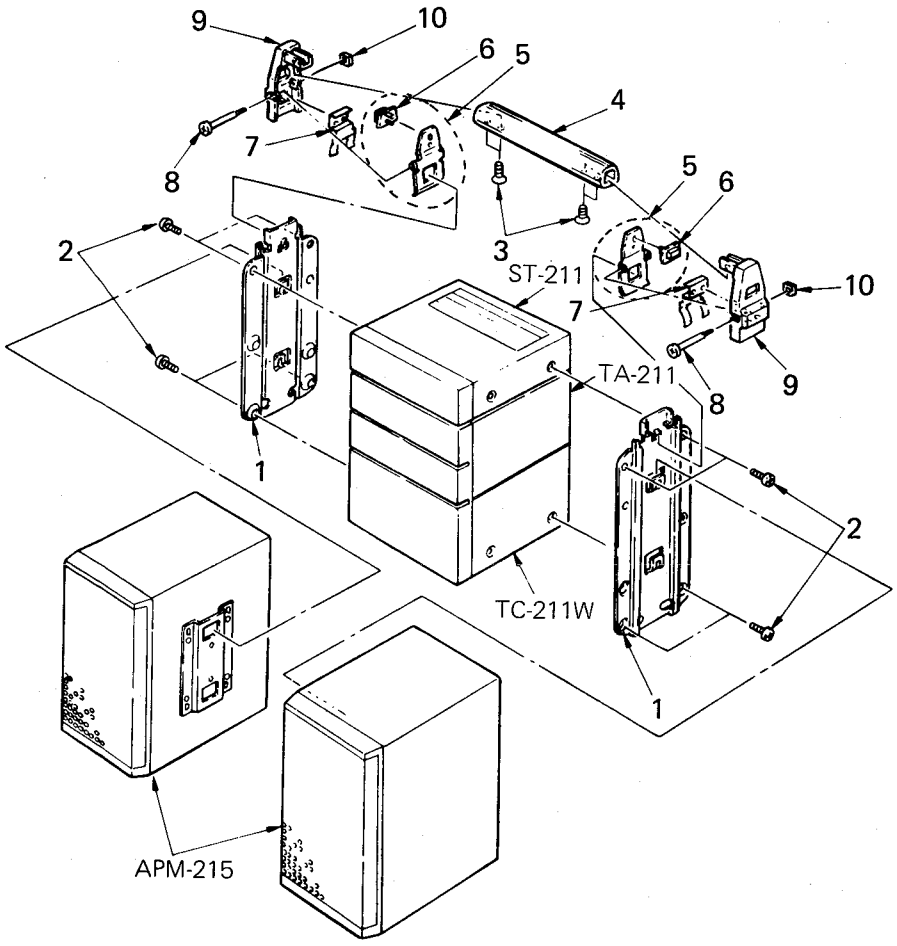
14 POWER switch

15 EQ LEVEL (equalization level) control buttons
Press "+" to increase, or "−" to decrease the sound level in the selected band during both listening and recording.

16 Graphic equalizer band selectors
Press to select the frequency band to equalize.

17 PHONES (headphones) jack (stereo minijack)

EXPLODED VIEW AND PARTS LIST



No.	Part No.	Description	Remarks
1	4-920-120-01	PLATE (A), SIDE	
2	X-4910-086-1	SCREW ASSY, SIDE PLATE	
3	7-685-247-19	SCREW +KTP 3X10 TYPE2 SLIT	
4	2-249-402-21	HANDLE	
5	X-4919-631-1	SEESAW ASSY	
6	4-884-803-12	PUSH BUTTON	
7	4-902-942-03	SPRING, LEAF	
8	4-884-805-21	SHAFT	
9	4-910-361-11	HOLDER, HANDLE	
10	4-884-801-11	NUT, PLATE	

ACCESSORY & PACKING MATERIAL

Part No.	Description
3-701-613-00	BAG, POLYETHYLENE
3-701-630-00	BAG, POLYETHYLENE
3-703-390-01	(US).....INSTRUCTION
3-769-027-11	(US).....MANUAL, INSTRUCTION
3-769-027-21	(AEP).....MANUAL, INSTRUCTION
3-769-027-41	(AEP,G-AEP)...MANUAL, INSTRUCTION
4-920-125-01	INDIVIDUAL CARTON
4-920-127-01	CUSHION, UPPER
4-920-128-01	CUSHION, LOWER
9-911-842-XX	CUSHION (F)

ST-211 PACKING MATERIAL

4-884-884-00	SHEET, PROTECTION

TA-211 PACKING MATERIAL

4-910-323-01	SHEET, PROTECTION

TC-211W PACKING MATERIAL

3-881-664-00	SHEET, PROTECTION

APM-215 PACKING MATERIAL

4-920-121-01	CUSHION
4-920-151-01	SHEET, PROTECTION

FH-211W

FM STEREO/FM-AM TUNER (ST-211)

AEP Model

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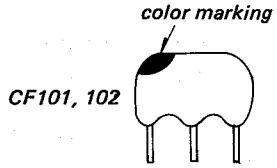
Because of the risk for explosion the battery must be replaced with the same type and manufacture.

Note on Ceramic Filter (CF101, 102) Replacement and Diode D314, 315 Connection.

This set employs two ceramic filters (CF101, 102) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by diodes (D314, 315) connection is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



O: connect
X: not connect

Ceramic filter		D314, 315 connection		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	※A (D314)	※B (D315)	
White	10.750	O	X	10.750
Red	10.700	X	X	10.700
Black	10.650	X	O	10.650

FM intermediate frequency is determined by the three types as shown above. Ceramic filters of same center frequency, i.e., of same color coding should be used for CF101 and CF102.

When replacing the ceramic filters, perform the FM Discriminator Adjustment.

SECTION 1
ADJUSTMENTS

FM SECTION

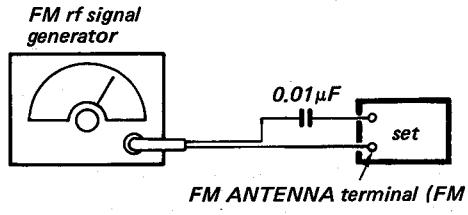
Setting:

BAND selector switch: FM

Note: FM discriminator alignment should be made after FM tracking adjustment.

FM Tracking Adjustment

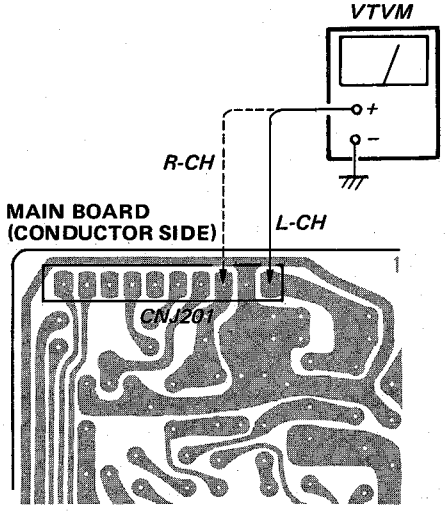
Setting:



Carrier frequency: 98 MHz
Modulation: 1 kHz, 75 kHz deviation
Output level: 3.16μV (10 dB)

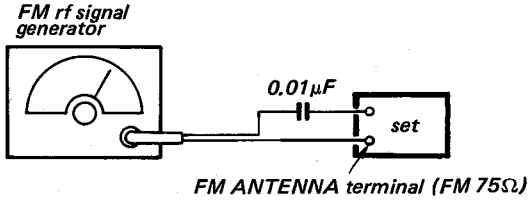
Procedure:

1. Push TUNING (+, –) button for 98 MHz.
2. Approach L002 and L003 not to contact each other.
3. Adjust L001 and L003, and repeat the adjustment 2 – 3 times for maximum VTVM reading.

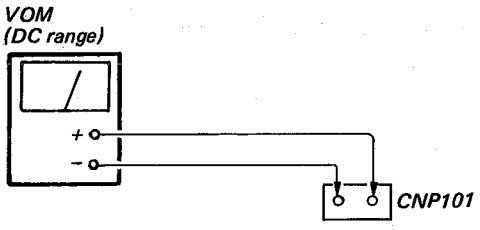


FM Discriminator Alignment (NULL Check)

Setting:

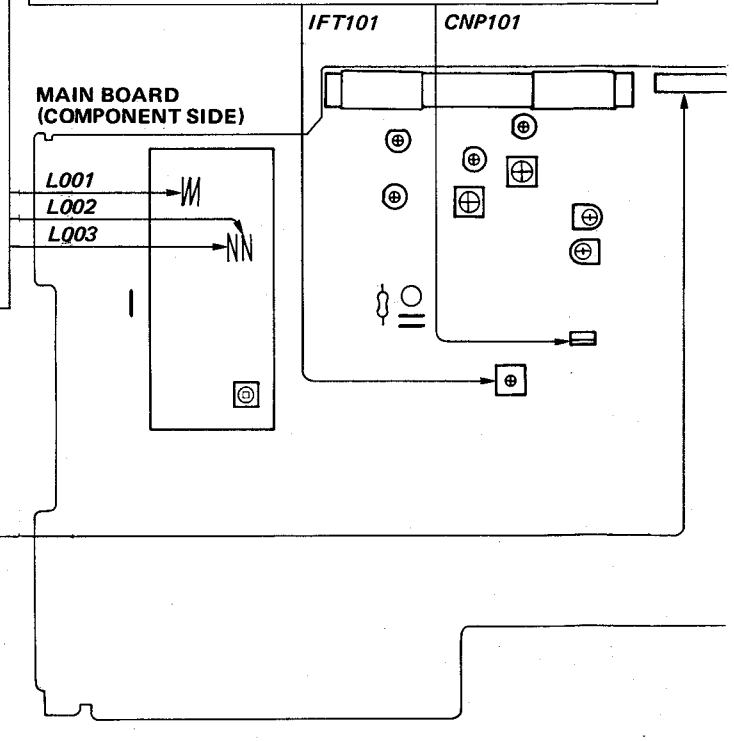


Carrier frequency: 98 MHz
Modulation: 1 kHz, 75 kHz deviation
Output level: 1 mV (60 dB)



Procedure:

1. Push the TUNING (+, –) button for 98 MHz.
2. Adjust IFT101 for 0 V reading on the VOM.



SECTION 2 DIAGRAMS

2-1. MOUNTING DIAGRAM

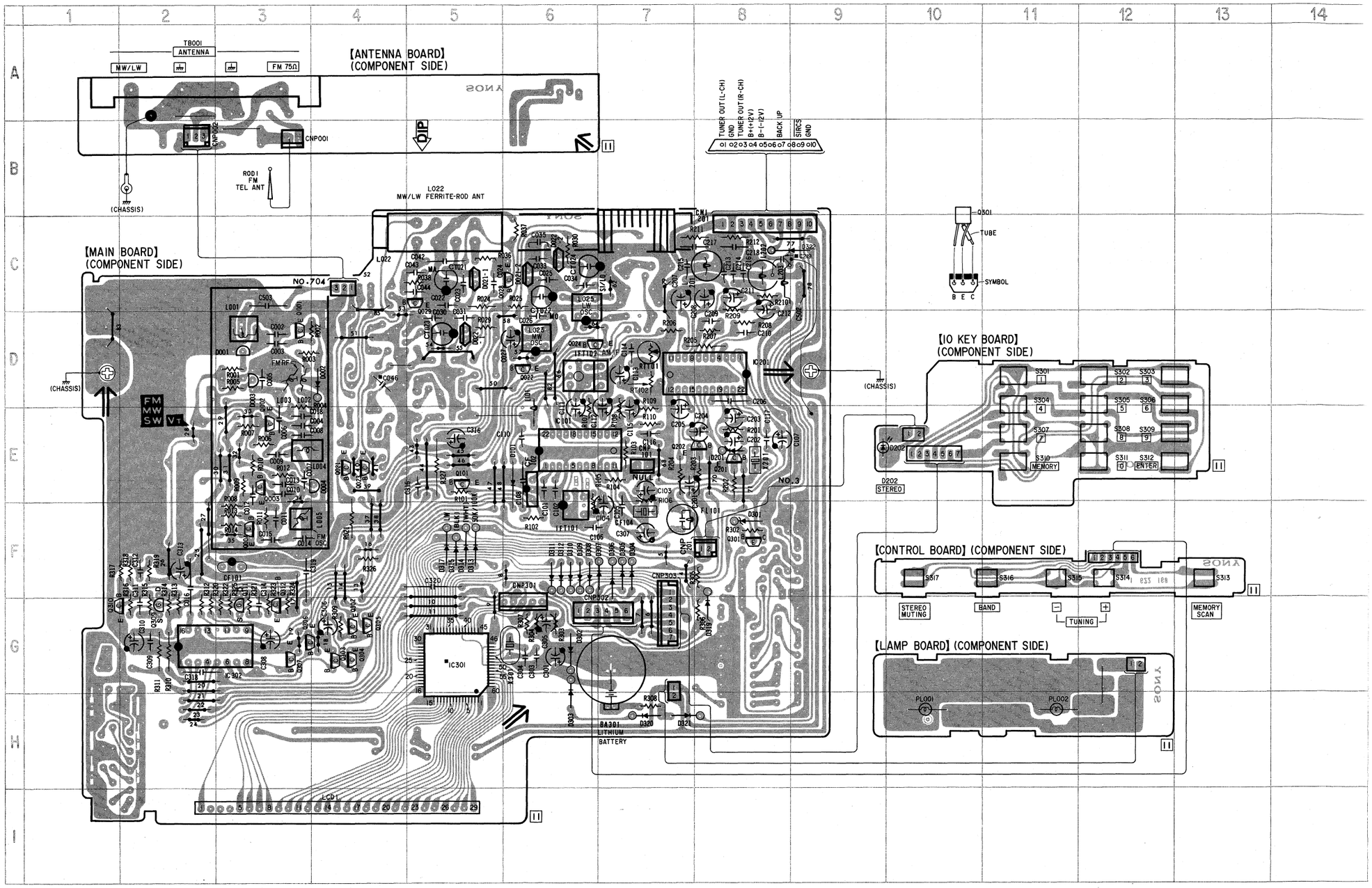
- See page ST-10 for semiconductor lead layouts.

Note:

- ■ : parts mounted on the conductor side.
- ⊡ : indicates side identified with part number.

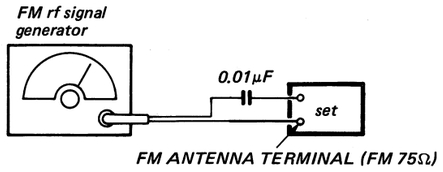
• SEMICONDUCTOR LOCATIONS

Ref. No.	Location	Ref. No.	Location
D001	D-3	D322	C-9
D002	D-4		
D003	D-3	IC101	E-6
D004	E-4	IC201	D-8
D021-1	C-5	IC301	G-5
D021-2	C-6	IC302	G-3
D022-1	D-5		
D022-2	C-6	Q001	D-3
D101	E-6	Q002	E-3
D201	E-8	Q003	E-3
D202	E-10	Q004	F-3
D301	F-8	Q021	E-4
D302	G-6	Q022	D-6
D303	H-6	Q023	E-4
D304	F-7	Q024	D-6
D305	F-7	Q028	C-6
D306	F-7	Q029	D-5
D307	F-7	Q101	E-5
D308	F-6	Q201	E-7
D309	F-6	Q202	E-8
D310	F-6	Q301	F-8
D311	F-6	Q302	G-4
D312	F-6	Q303	G-4
D313	F-5	Q304	G-4
D314	F-5	Q305	G-4
D315	F-5	Q306	G-3
D317	F-5	Q307	G-3
D319	G-8	Q309	G-2
D320	H-7	Q310	G-1
D321	H-7	Q312	F-3



FM OSC Voltage Adjustment

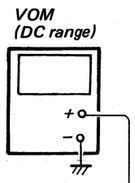
Setting:



Carrier frequency: *108 MHz*
Modulation: *1 kHz, 75 kHz deviation*
Output level: *as low as possible*

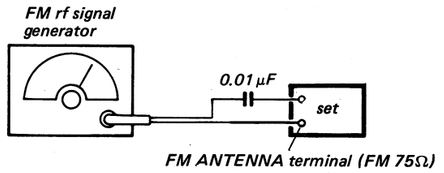
Procedure:

1. Push the TUNING (+, –) button for 108 MHz.
2. Adjust L005 for 8 – 8.5 V reading on the VOM.



FM TUNED Indication Lighting Level Adjustment

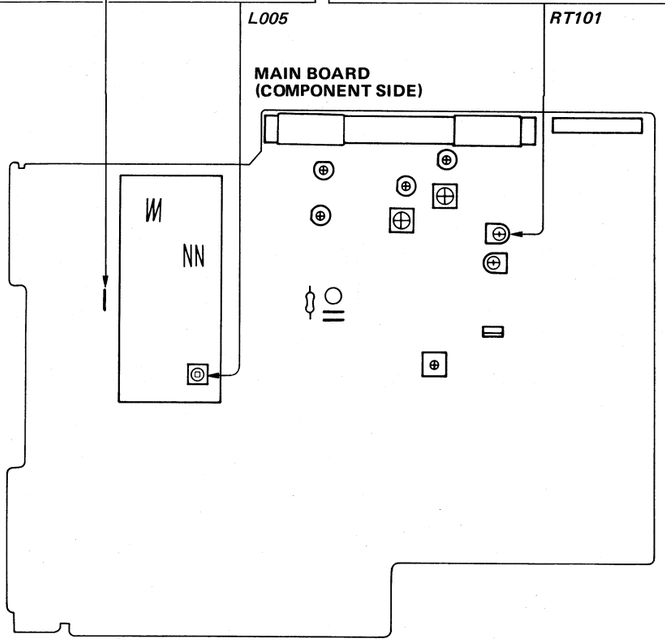
Setting:



Carrier frequency: *98 MHz*
Modulation: *1 kHz, 75 kHz deviation*
Output level: *22.4μV (27 dB)*

Procedure:

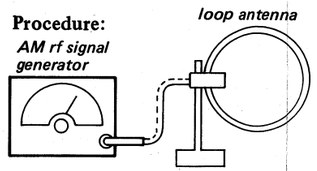
1. Confirm that the MUTING indicator lights up on the display window.
2. Tune the set to 98 MHz.
3. Adjust RT101 so that the TUNED indicator goes on.



AM TUNED INCIATION LIGHTING LEVEL ADJUSTMENT

BAND select switch: MW

Procedure:



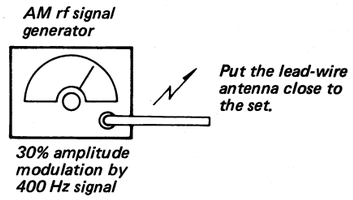
Carrier frequency: *999 kHz*
Modulation: *400 Hz, 30% modulation*

1. Set loop antenna so that the MW antenna input level becomes 0.7V/m (57 dB/m).
2. Adjust RT102 so that the LED lights up.

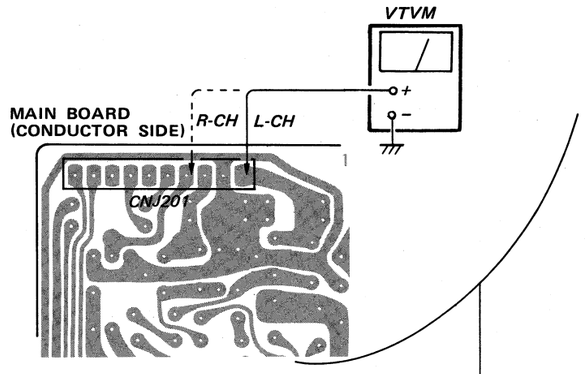
AM SECTION

Setting:

BAND selector switch: MW or LW



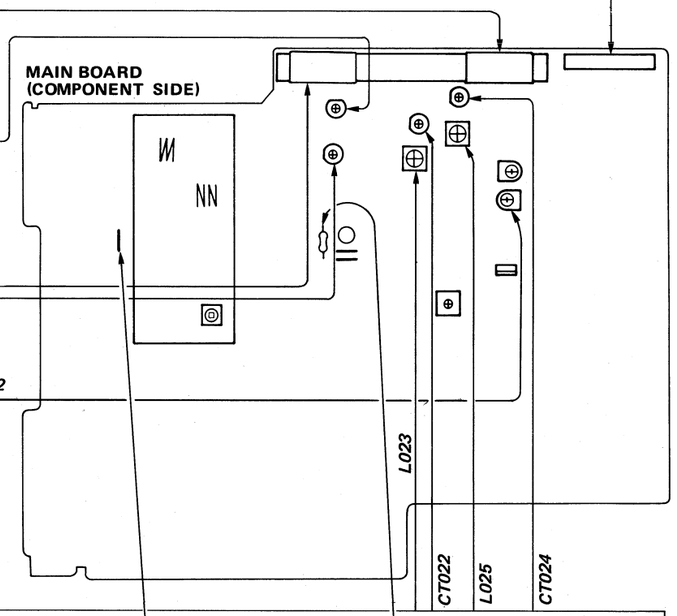
- Repeat the procedures in each adjustment several times, and the OSC voltage and tracking adjustments should be finally done by the trimmer capacitors.



- **Perform after LW TRACKING ADJUSMENT.**

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
603 kHz	L022
1,404 kHz	CT021

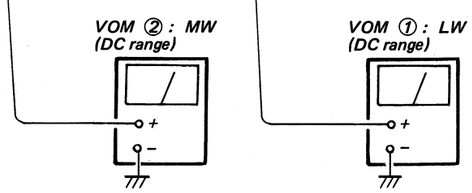
LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
162 kHz	L022
270 kHz	CT023



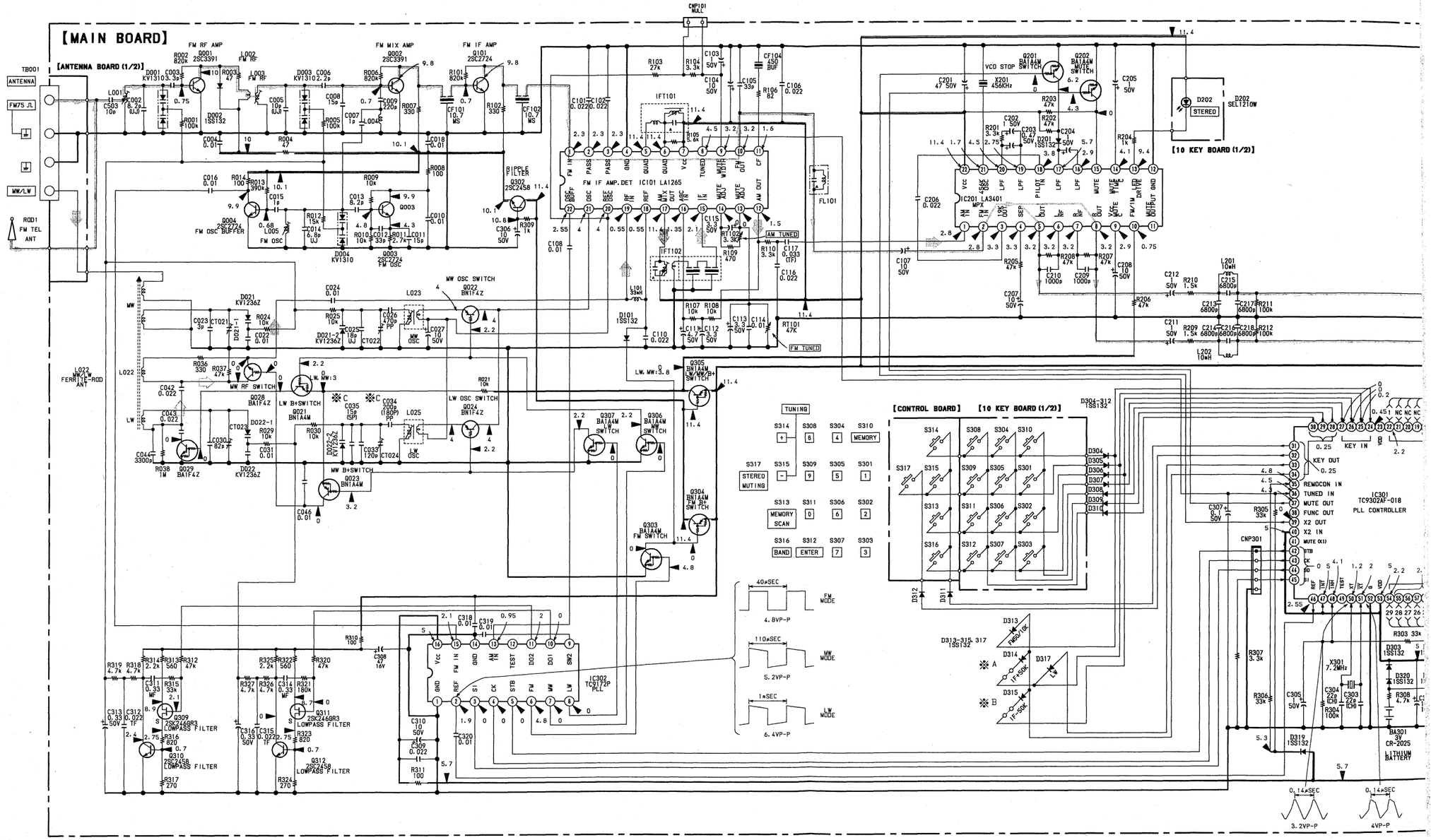
MW/LW OSC Voltage Adjustment

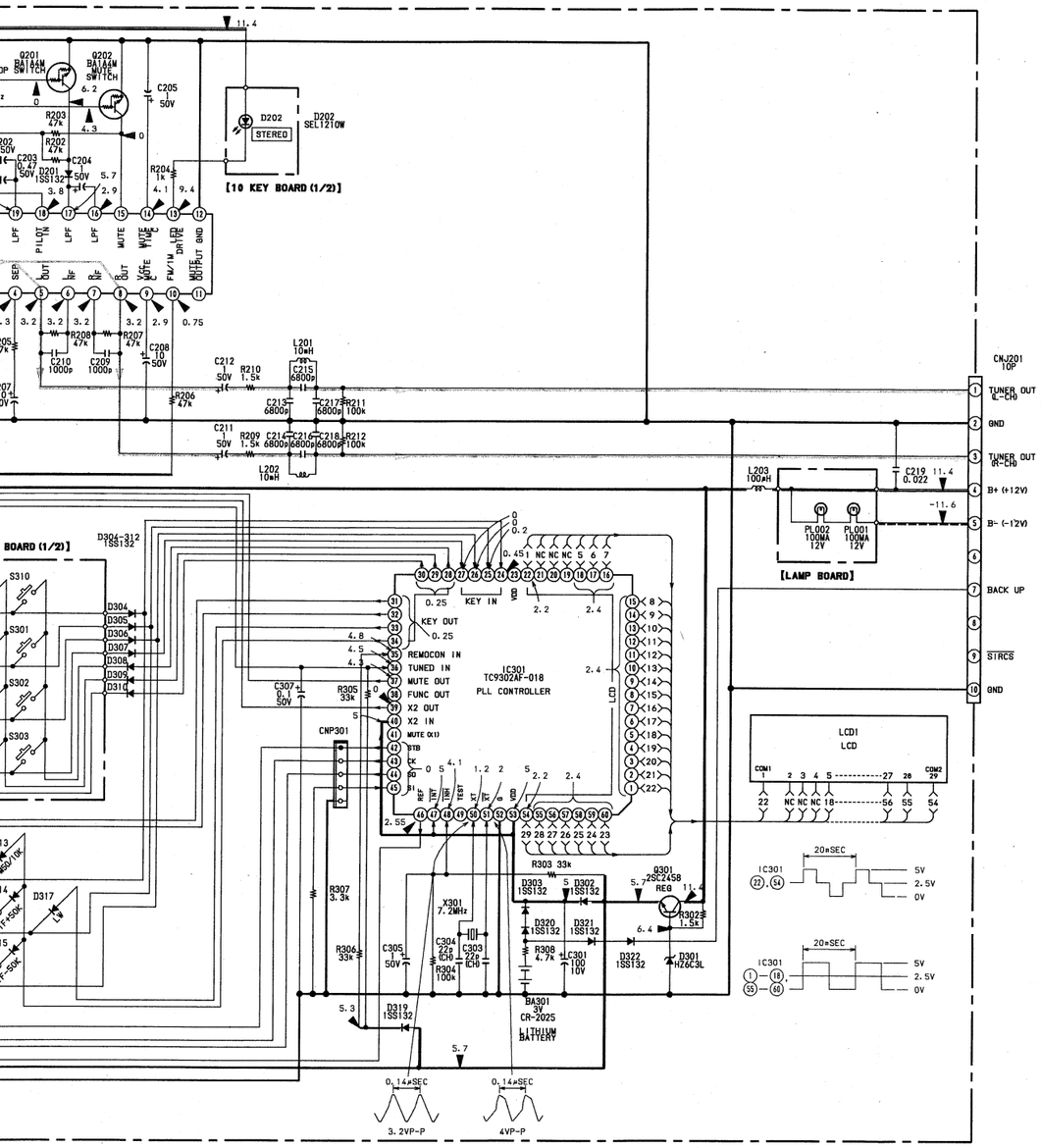
Procedure:

1. Set BAND selector switch to MW.
2. Push TUNING (+, –) button for 522 kHz. Adjust L023 for 1 – 1.1 V VOM ② reading.
3. Push the button for 1,611 kHz. Adjust CT022 for 8 – 8.5 V VOM ② reading.
4. Set BAND selector switch to LW.
5. Push TUNING (+, –) button for 144 kHz. Adjust L025 for 1 – 1.1 V VOM ① reading.
6. Push the button for 288 kHz. Adjust CT024 for 8 – 8.5 V VOM ① reading.



2-2. SCHEMATIC DIAGRAM





Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ○—▷: FM signal path.
- ○⇨: MW signal path.
- ○⇨: LW signal path.
- △ : internal component.
- ——— : B+ bus.
- – – – : B– bus.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under detuned conditions with a VOM (50 kΩ/V).
  No Mark: FM Mode
- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken to ground in no-signal mode by using oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- ※A, B: See page ST-1 "Note on ceramic filter replacement and diode connection".
- ※C

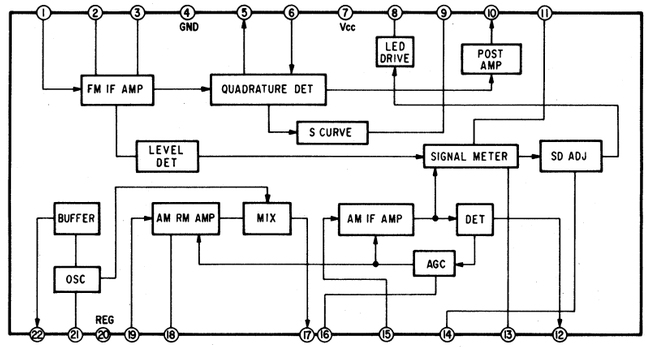
	C034	C035
TYPE 1	200P	15P
TYPE 2	180P	5P

There are two types of pairing of the capacity in C034 and C035 as mentioned left.

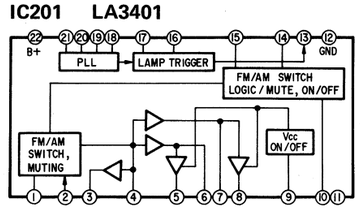
- Switches:

Ref. No.	Switch	Position
S301	1	OFF
S302	2	OFF
S303	3	OFF
S304	4	OFF
S305	5	OFF
S306	6	OFF
S307	7	OFF
S308	8	OFF
S309	9	OFF
S310	MEMORY	OFF
S311	0	OFF
S312	ENTER	OFF
S313	MEMORY SCAN	OFF
S314	TUNING +	OFF
S315	TUNING -	OFF
S316	BAND	OFF
S317	STEREO MUTING	OFF

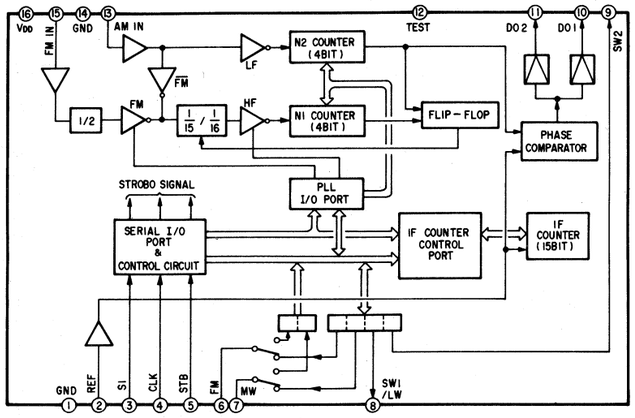
IC101 LA1265



IC201 LA3401

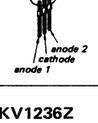


IC302 TC9172P

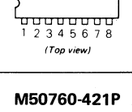


● **Semiconductor Lead Layouts**

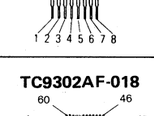
1SS132
HZ6C2L



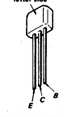
SEL2210S-C



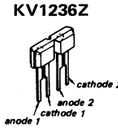
LA1265
LA3401



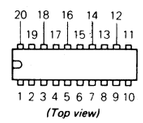
2SC2724-C
2SC3402
2SA1348
2SC634SP



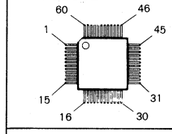
KV1310



TC9172P



CX20106A

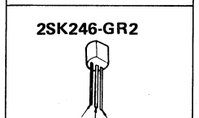


2SC3391-B

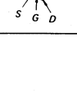
KV1236Z

M50760-421P

TC9302AF-018



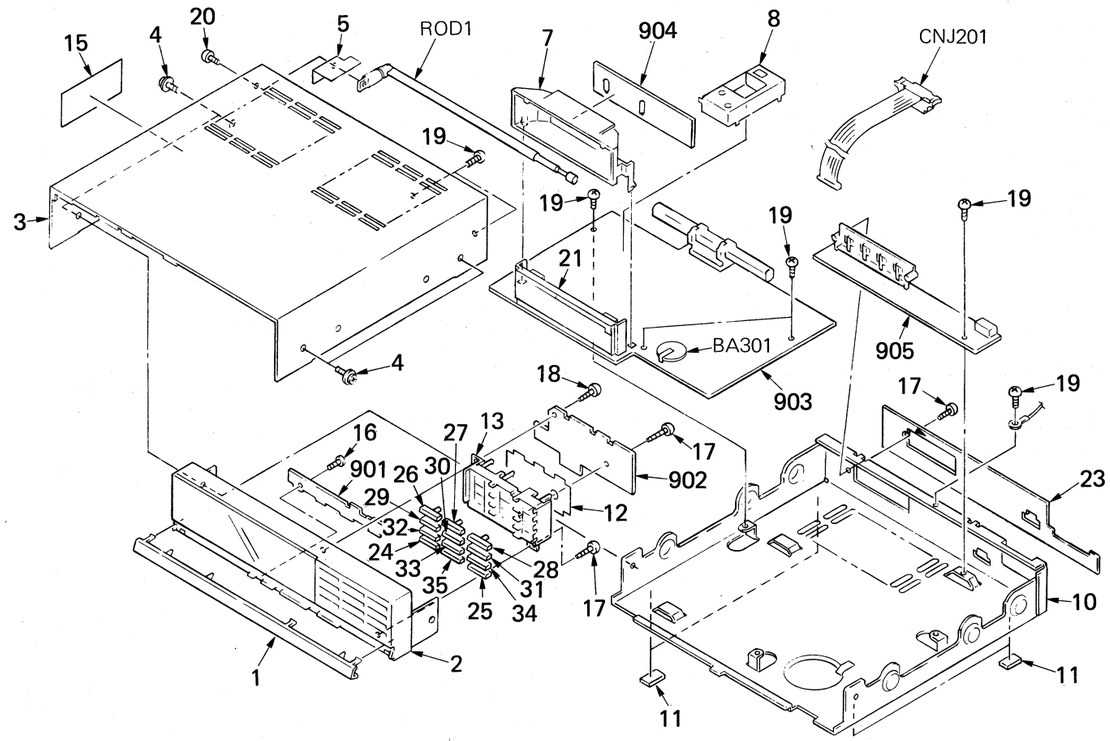
2SK246-GR2



BN1F4Z
BA1F4Z

SECTION 3
EXPLODED VIEW AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color Indication of Appearance Parts
  Example: (RED) ..... KNOB, BALANCE (WHITE)
  (RED) = Cabinet's Color; (WHITE) = Parts' Color



No.	Part No.	Description	Remarks
1	4-919-616-01	PANEL, CONTROL	
2	X-4919-626-1	PANEL ASSY	
3	4-920-137-01	CASE	
4	4-886-821-21	SCREW, M3 CASE STOPPER	
5	*4-919-611-01	BRACKET, ANT	
7	*4-917-275-01	HOUSE, LAMP	
8	*4-874-704-01	CASE, SHIELD	
10	*4-919-617-01	CHASSIS	
11	4-919-608-01	FOOT	
12	*4-919-607-01	SPACER	
13	*4-919-614-01	RETAINER, BUTTON	
15	*4-919-670-01	LABEL, MODEL NUMBER (AE)	
16	7-685-133-19	SCREW +P 2.6X6 TYPE2 SLIT	
17	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
18	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
19	7-682-147-01	SCREW +BVTT 3X6 (S)	
20	7-682-547-09	SCREW +B 3X6	
21	*4-909-633-01	ILLUMINATOR	
23	*4-919-613-11	COVER, REAR	
24	4-920-175-01	BUTTON (MEMORY)	

No.	Part No.	Description	Remarks
25	4-920-175-11	BUTTON (ENTER)	
26	4-920-176-01	BUTTON (1)	
27	4-920-176-11	BUTTON (2)	
28	4-920-176-21	BUTTON (3)	
29	4-920-176-31	BUTTON (4)	
30	4-920-176-41	BUTTON (5)	
31	4-920-176-51	BUTTON (6)	
32	4-920-176-61	BUTTON (7)	
33	4-920-176-71	BUTTON (8)	
34	4-920-176-81	BUTTON (9)	
35	4-920-176-91	BUTTON (0)	
901	*1-622-168-11	PC BOARD, CONTROL	
902	*1-622-167-11	PC BOARD, 10 KEY	
903	A-4351-596-A	MOUNTED PCB, TUNER	
904	*1-622-170-11	PC BOARD, LAMP	
905	*1-622-169-11	PC BOARD, ANTENNA	
BA301	1-528-120-00	BATTERY, LITHIUM (CR-2025)	
CNJ201	1-559-163-11	CORD (WITH CONNECTOR) 10P	
ROD1	1-501-270-00	ANTENNA, TELESCOPIC	

SECTION 4
ELECTRICAL PARTS LIST

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*1-622-168-11	PC BOARD, CONTROL			
902	*1-622-167-11	PC BOARD, 10 KEY			
903	A-4351-596-A	MOUNTED PCB, TUNER			
904	*1-622-170-11	PC BOARD, LAMP			
905	*1-622-169-11	PC BOARD, ANTENNA			
BA301	1-528-120-00	BATTERY, LITHIUM (CR-2025)			
C002	1-162-198-31	CERAMIC	8.2PF	10%	50V
C003	1-162-193-31	CERAMIC	3.3PF	10%	50V
C004	1-161-379-00	CERAMIC	0.01MF	20%	16V
C005	1-162-199-31	CERAMIC	10PF	5%	50V
C006	1-162-191-31	CERAMIC	2.2PF	10%	50V
C007	1-162-187-31	CERAMIC	1PF	20%	50V
C008	1-162-203-31	CERAMIC	15PF	5%	50V
C009	1-162-286-31	CERAMIC	220PF	10%	50V
C010	1-161-379-00	CERAMIC	0.01MF	20%	16V
C011	1-162-203-31	CERAMIC	15PF	5%	50V
C012	1-162-211-31	CERAMIC	33PF	5%	50V
C013	1-162-198-31	CERAMIC	8.2PF	10%	50V
C014	1-162-197-31	CERAMIC	6.8PF	10%	50V
C015	1-162-187-31	CERAMIC	1PF	20%	50V
C016	1-161-379-00	CERAMIC	0.01MF	20%	16V
C018	1-161-379-00	CERAMIC	0.01MF	20%	16V
C022	1-161-379-00	CERAMIC	0.01MF	20%	16V
C023	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C024	1-161-379-00	CERAMIC	0.01MF	20%	16V
C025	1-102-953-00	CERAMIC	18PF	5%	50V
C026	1-130-014-00	FILM	470PF	5%	50V
C027	1-123-875-91	ELECT	10MF	20%	50V
C030	1-102-971-00	CERAMIC	82PF	5%	50V
C031	1-161-379-00	CERAMIC	0.01MF	20%	16V
C033	1-102-816-00	CERAMIC	120PF	5%	50V
C034	1-130-047-00	(TYPE 2).. FILM	180PF	5%	50V
C034	1-136-010-00	(TYPE 1).. FILM	200PF	5%	50V
C035	1-102-942-00	(TYPE 2).. CERAMIC	5PF	5%	50V
C035	1-102-951-00	(TYPE 1).. CERAMIC	15PF	5%	50V
C042	1-161-494-00	CERAMIC	0.022MF	30%	25V
C043	1-101-005-00	CERAMIC	0.022MF		50V
C044	1-161-327-00	CERAMIC	0.0033MF	20%	16V
C046	1-161-379-00	CERAMIC	0.01MF	20%	16V
C101	1-101-005-00	CERAMIC	0.022MF		50V
C102	1-101-005-00	CERAMIC	0.022MF		50V
C103	1-124-791-11	ELECT	1MF	20%	50V
C104	1-123-875-91	ELECT	10MF	20%	50V
C105	1-162-211-31	CERAMIC	33PF	5%	50V
C106	1-101-005-00	CERAMIC	0.022MF		50V
C107	1-123-875-91	ELECT	10MF	20%	50V
C108	1-161-379-00	CERAMIC	0.01MF	20%	16V

	C034	C035
TYPE 1	200P	15P
TYPE 2	180P	5P

There are two types of pairing of the capacity in C034 and C035 as mentioned left.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C110	1-101-005-00	CERAMIC	0.022MF		50V
C111	1-124-927-11	ELECT	4.7MF	20%	50V
C112	1-124-905-11	ELECT	3.3MF	20%	50V
C113	1-124-905-11	ELECT	3.3MF	20%	50V
C114	1-161-379-00	CERAMIC	0.01MF	20%	16V
C115	1-124-905-11	ELECT	3.3MF	20%	50V
C116	1-101-005-00	CERAMIC	0.022MF		50V
C117	1-130-489-00	MYLAR	0.033MF	5%	50V
C201	1-123-332-00	ELECT	47MF	20%	16V
C202	1-124-791-11	ELECT	1MF	20%	50V
C203	1-124-902-00	ELECT	0.47MF	20%	50V
C204	1-124-791-11	ELECT	1MF	20%	50V
C205	1-124-791-11	ELECT	1MF	20%	50V
C206	1-161-494-00	CERAMIC	0.022MF	30%	25V
C207	1-123-875-91	ELECT	10MF	20%	50V
C208	1-123-875-91	ELECT	10MF	20%	50V
C209	1-102-074-00	CERAMIC	0.001MF	10%	50V
C210	1-102-074-00	CERAMIC	0.001MF	10%	50V
C211	1-124-791-11	ELECT	1MF	20%	50V
C212	1-124-791-11	ELECT	1MF	20%	50V
C213	1-161-329-00	CERAMIC	0.0068MF	20%	16V
C214	1-161-329-00	CERAMIC	0.0068MF	20%	16V
C215	1-161-329-00	CERAMIC	0.0068MF	20%	16V
C216	1-161-329-00	CERAMIC	0.0068MF	20%	16V
C217	1-161-329-00	CERAMIC	0.0068MF	20%	16V
C218	1-161-329-00	CERAMIC	0.0068MF	20%	16V
C219	1-101-005-00	CERAMIC	0.022MF		50V
C301	1-124-443-00	ELECT	100MF	20%	10V
C303	1-102-959-00	CERAMIC	22PF	5%	50V
C304	1-102-959-00	CERAMIC	22PF	5%	50V
C305	1-124-791-11	ELECT	1MF	20%	50V
C306	1-123-875-91	ELECT	10MF	20%	50V
C307	1-124-463-00	ELECT	0.1MF	20%	50V
C308	1-123-332-00	ELECT	47MF	20%	16V
C309	1-101-005-00	CERAMIC	0.022MF		50V
C310	1-123-875-91	ELECT	10MF	20%	50V
C311	1-136-171-00	FILM	0.33MF	5%	50V
C312	1-130-487-00	MYLAR	0.022MF	5%	50V
C313	1-124-252-00	ELECT	0.33MF	20%	50V
C314	1-136-171-00	FILM	0.33MF	5%	50V
C315	1-130-487-00	MYLAR	0.022MF	5%	50V
C316	1-124-252-00	ELECT	0.33MF	20%	50V
C318	1-161-379-00	CERAMIC	0.01MF	20%	16V
C319	1-161-379-00	CERAMIC	0.01MF	20%	16V
C320	1-161-379-00	CERAMIC	0.01MF	20%	16V
C503	1-162-199-31	CERAMIC	10PF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CF101	1-527-968-00	FILTER, CERAMIC
CF102	1-527-968-00	FILTER, CERAMIC
CF104	1-527-981-00	FILTER, CERAMIC
CNJ201	1-559-163-11	CORD (WITH CONNECTOR) 10P
CNP001	*1-560-060-00	PIN, CONNECTOR 2P
CNP002	*1-564-337-00	PIN, CONNECTOR 3P
CNP101	*1-560-060-00	PIN, CONNECTOR 2P
CNP201	*1-564-336-00	PIN, CONNECTOR 2P
CNP301	*1-560-063-00	PIN, CONNECTOR 5P
CNP302	*1-560-064-00	PIN, CONNECTOR 6P
CNP303	*1-564-341-11	PIN, CONNECTOR 7P
CT021	1-141-227-00	TRIMMER, CERAMIC
CT022	1-141-304-21	TRIMMER, CERAMIC
CT023	1-141-227-00	CAP, CERAMIC TRIMMER
CT024	1-141-227-00	CAP, CERAMIC TRIMMER
D001	8-719-918-45	DIODE KV1310
D002	8-719-940-76	DIODE 1SS132
D003	8-719-918-45	DIODE KV1310
D004	8-719-918-45	DIODE KV1310
D021	8-719-902-79	DIODE KV1236Z
D022	8-719-902-79	DIODE KV1236Z
D101	8-719-940-76	DIODE 1SS132
D201	8-719-940-76	DIODE 1SS132
D202	8-719-303-18	DIODE SEL1210W
D301	8-719-910-68	DIODE HZ6C2L
D302	8-719-940-76	DIODE 1SS132
D303	8-719-940-76	DIODE 1SS132
D304	8-719-940-76	DIODE 1SS132
D305	8-719-940-76	DIODE 1SS132
D306	8-719-940-76	DIODE 1SS132
D307	8-719-940-76	DIODE 1SS132
D308	8-719-940-76	DIODE 1SS132
D309	8-719-940-76	DIODE 1SS132
D310	8-719-940-76	DIODE 1SS132
D311	8-719-940-76	DIODE 1SS132
D312	8-719-940-76	DIODE 1SS132
D313	8-719-940-76	DIODE 1SS132
D314	8-719-940-76	DIODE 1SS132
D315	8-719-940-76	DIODE 1SS132
D317	8-719-940-76	DIODE 1SS132
D319	8-719-940-76	DIODE 1SS132
D320	8-719-940-76	DIODE 1SS132
D321	8-719-940-76	DIODE 1SS132
D322	8-719-940-76	DIODE 1SS132
FL101	1-235-126-00	ENCAPSULATED COMPONENT

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC101	8-759-801-81	IC LA1265
IC201	8-759-801-80	IC LA3401
IC301	8-759-207-45	IC TC9302AF-018
IC302	8-759-202-63	IC TC9172P
IFT101	1-404-659-11	COIL, DISCRIMINATOR
IFT102	1-404-713-11	TRANSFORMER, IF
L001	*1-422-336-11	COIL, AIR-CORE
L002	*1-422-040-00	COIL, AIR-CORE
L003	*1-422-081-00	COIL (WITH CORE)
L004	*1-422-039-00	COIL, AIR-CORE
L005	*1-459-396-00	COIL (WITH CORE)
L022	1-402-151-11	ANTENNA, FERRITE-ROD (LW/MW)
L023	1-406-089-11	COIL (OSC)
L025	1-406-207-11	COIL, LW (OSC)
L101	1-408-930-00	MICRO INDUCTOR 33MMH
L201	1-408-924-00	MICRO INDUCTOR 10MMH
L202	1-408-924-00	MICRO INDUCTOR 10MMH
L203	1-410-601-21	MICRO INDUCTOR 100UH
LCD1	1-807-453-41	DISPLAY PANEL, LIQUID CRYSTAL
PL001	1-518-527-51	LAMP, PILOT
PL002	1-518-527-51	LAMP, PILOT
Q001	8-729-304-38	TRANSISTOR 2SC3391
Q002	8-729-304-38	TRANSISTOR 2SC3391
Q003	8-729-672-42	TRANSISTOR 2SC2724-C
Q004	8-729-672-42	TRANSISTOR 2SC2724-C
Q021	9-986-159-01	TRANSISTOR 2SA1348
Q022	8-729-115-33	TRANSISTOR BN1F4Z
Q023	9-986-159-01	TRANSISTOR 2SA1348
Q024	8-729-115-33	TRANSISTOR BN1F4Z
Q028	8-729-115-93	TRANSISTOR BA1F4Z
Q029	8-729-806-28	TRANSISTOR 2SC3402
Q101	8-729-672-42	TRANSISTOR 2SC2724-C
Q201	8-729-806-28	TRANSISTOR 2SC3402
Q202	8-729-806-28	TRANSISTOR 2SC3402
Q301	8-729-600-27	TRANSISTOR 2SC634SP
Q302	8-729-600-27	TRANSISTOR 2SC634SP
Q303	8-729-806-28	TRANSISTOR 2SC3402
Q304	9-986-159-01	TRANSISTOR 2SA1348
Q305	9-986-159-01	TRANSISTOR 2SA1348
Q306	8-729-806-28	TRANSISTOR 2SC3402
Q307	8-729-806-28	TRANSISTOR 2SC3402
Q309	8-729-201-56	TRANSISTOR 2SK246GR2
Q310	8-729-600-27	TRANSISTOR 2SC634SP
Q311	8-729-201-56	TRANSISTOR 2SK246GR2
Q312	8-729-600-27	TRANSISTOR 2SC634SP

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R001	1-249-441-11	CARBON	100K	5%	1/6W
R002	1-215-491-00	CARBON	820K	5%	1/6W
R003	1-249-401-11	CARBON	47	5%	1/6W
R004	1-249-401-11	CARBON	47	5%	1/6W
R005	1-249-441-11	CARBON	100K	5%	1/6W
R006	1-215-491-00	CARBON	820K	5%	1/6W
R007	1-249-411-11	CARBON	330	5%	1/6W
R008	1-249-405-11	CARBON	100	5%	1/6W
R009	1-249-429-11	CARBON	10K	5%	1/6W
R010	1-249-429-11	CARBON	10K	5%	1/6W
R011	1-249-422-11	CARBON	2.7K	5%	1/6W
R012	1-249-431-11	CARBON	15K	5%	1/6W
R013	1-215-483-00	CARBON	390K	5%	1/6W
R014	1-249-405-11	CARBON	100	5%	1/6W
R021	1-249-429-11	CARBON	10K	5%	1/6W
R024	1-249-429-11	CARBON	10K	5%	1/6W
R025	1-249-429-11	CARBON	10K	5%	1/6W
R029	1-249-429-11	CARBON	10K	5%	1/6W
R030	1-249-429-11	CARBON	10K	5%	1/6W
R036	1-249-411-11	CARBON	330	5%	1/6W
R037	1-249-437-11	CARBON	47K	5%	1/6W
R038	1-215-493-00	CARBON	1M	5%	1/6W
R101	1-215-491-00	CARBON	820K	5%	1/6W
R102	1-249-411-11	CARBON	330	5%	1/6W
R103	1-249-434-11	CARBON	27K	5%	1/6W
R104	1-249-423-11	CARBON	3.3K	5%	1/6W
R105	1-247-849-00	CARBON	5.6K	5%	1/6W
R106	1-249-404-00	CARBON	82	5%	1/6W
R107	1-249-429-11	CARBON	10K	5%	1/6W
R108	1-249-429-11	CARBON	10K	5%	1/6W
R109	1-249-413-11	CARBON	470	5%	1/6W
R110	1-249-423-11	CARBON	3.3K	5%	1/6W
R111	1-249-420-11	CARBON	1.8K	5%	1/6W
R201	1-249-423-11	CARBON	3.3K	5%	1/6W
R202	1-249-437-11	CARBON	47K	5%	1/6W
R203	1-249-437-11	CARBON	47K	5%	1/6W
R204	1-249-417-11	CARBON	1K	5%	1/6W
R205	1-249-437-11	CARBON	47K	5%	1/6W
R206	1-249-437-11	CARBON	47K	5%	1/6W
R207	1-249-437-11	CARBON	47K	5%	1/6W
R208	1-249-437-11	CARBON	47K	5%	1/6W
R209	1-249-419-11	CARBON	1.5K	5%	1/6W
R210	1-249-419-11	CARBON	1.5K	5%	1/6W
R211	1-249-441-11	CARBON	100K	5%	1/6W
R212	1-249-441-11	CARBON	100K	5%	1/6W
R302	1-249-419-11	CARBON	1.5K	5%	1/6W
R303	1-249-435-11	CARBON	33K	5%	1/6W
R304	1-249-441-11	CARBON	100K	5%	1/6W
R305	1-249-435-11	CARBON	33K	5%	1/6W
R306	1-249-435-11	CARBON	33K	5%	1/6W
R307	1-249-423-11	CARBON	3.3K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R308	1-249-425-11	CARBON	4.7K	5%	1/6W
R309	1-249-417-11	CARBON	1K	5%	1/6W
R310	1-249-405-11	CARBON	100	5%	1/6W
R311	1-249-405-11	CARBON	100	5%	1/6W
R312	1-249-437-11	CARBON	47K	5%	1/6W
R313	1-249-414-11	CARBON	560	5%	1/6W
R314	1-249-421-11	CARBON	2.2K	5%	1/6W
R315	1-249-435-11	CARBON	33K	5%	1/6W
R316	1-249-416-11	CARBON	820	5%	1/6W
R317	1-249-410-11	CARBON	270	5%	1/6W
R318	1-249-425-11	CARBON	4.7K	5%	1/6W
R319	1-249-425-11	CARBON	4.7K	5%	1/6W
R320	1-249-437-11	CARBON	47K	5%	1/6W
R321	1-247-885-00	CARBON	180K	5%	1/6W
R322	1-249-414-11	CARBON	560	5%	1/6W
R323	1-249-416-11	CARBON	820	5%	1/6W
R324	1-249-410-11	CARBON	270	5%	1/6W
R325	1-249-421-11	CARBON	2.2K	5%	1/6W
R326	1-249-425-11	CARBON	4.7K	5%	1/6W
R327	1-249-425-11	CARBON	4.7K	5%	1/6W
ROD1	1-501-270-00	ANTENNA, TELESCOPIC			
RT101	1-228-996-00	RES, ADJ, CARBON 47K			
S301	1-554-303-21	SWITCH, KEY BOARD (PRESET 1)			
S302	1-554-303-21	SWITCH, KEY BOARD (PRESET 2)			
S303	1-554-303-21	SWITCH, KEY BOARD (PRESET 3)			
S304	1-554-303-21	SWITCH, KEY BOARD (PRESET 4)			
S305	1-554-303-21	SWITCH, KEY BOARD (PRESET 5)			
S306	1-554-303-21	SWITCH, KEY BOARD (PRESET 6)			
S307	1-554-303-21	SWITCH, KEY BOARD (PRESET 7)			
S308	1-554-303-21	SWITCH, KEY BOARD (PRESET 8)			
S309	1-554-303-21	SWITCH, KEY BOARD (PRESET 9)			
S310	1-554-303-21	SWITCH, KEY BOARD (MEMORY)			
S311	1-554-303-21	SWITCH, KEY BOARD (PRESET 0)			
S312	1-554-303-21	SWITCH, KEY BOARD (ENTER)			
S313	1-570-876-11	SWITCH, KEY BOARD (MEMORY SCAN)			
S314	1-570-876-11	SWITCH, KEY BOARD (TUNING:+)			
S315	1-570-876-11	SWITCH, KEY BOARD (TUNING:-)			
S316	1-570-876-11	SWITCH, KEY BOARD (BAND)			
S317	1-570-876-11	SWITCH, KEY BOARD (STEREO MUTING)			
TB001	1-536-708-00	TERMINAL BOARD, PUSH 4P			
X201	1-567-250-11	OSCILLATOR, CERAMIC			
X301	1-567-736-11	VIBRATOR, CRYSTAL			

FH-211W

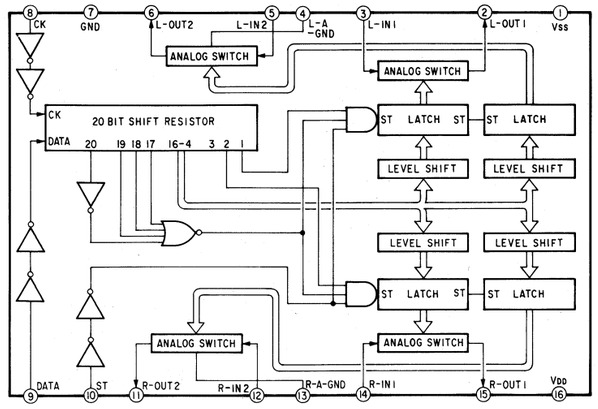
INTEGRATED STEREO AMPLIFIER (TA-211)

US Model
AEP Model

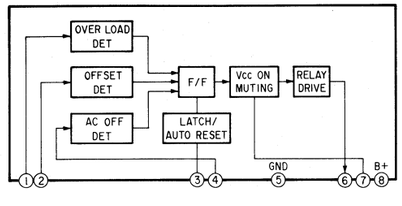
SECTION 1
DIAGRAMS

- IC BLOCK DIAGRAMS

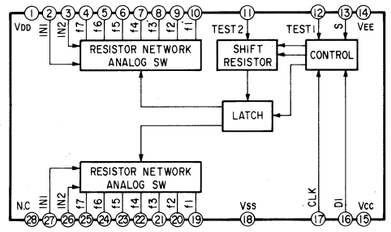
IC405 TC9176P



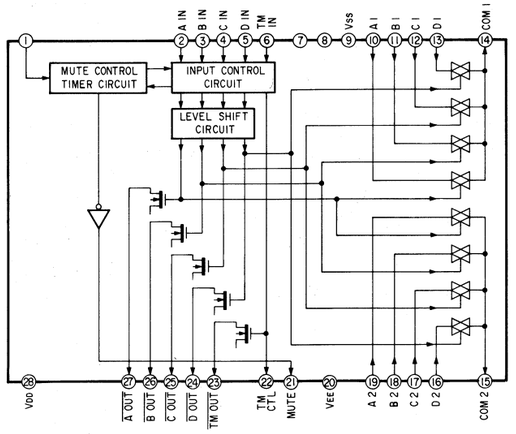
IC701 UPC1237HA



IC402 LC7522

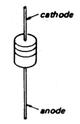


IC102 LC7815H

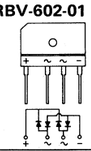


- **Semiconductor Lead Layouts**

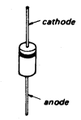
RD4.7ES-B2



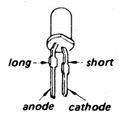
RBV-602-01



US1060M
HZS6B3L
10E2N

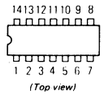


SEL2910A-C

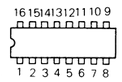


SEL2913K-C
SEL2413E-D

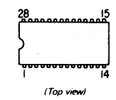
μPC4574C



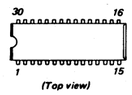
TC9176P



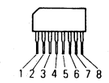
LC7522
LC7815H



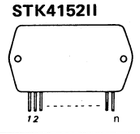
M50765-440SP



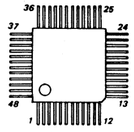
M5218L
μPC1237HA



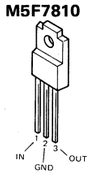
STK4152II



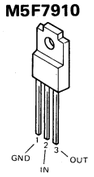
LC7560
LC7060AN



M5F78M06
M5F7810

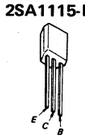


M5F7910



2SC1841-PA

2SC634SP
2SA1115-F



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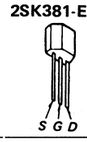
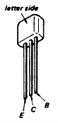


2SA1175



Note on Mounting Diagram:

- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- ⊗ : Through hole.

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.
- : B+ bus.
- : B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- Switches:

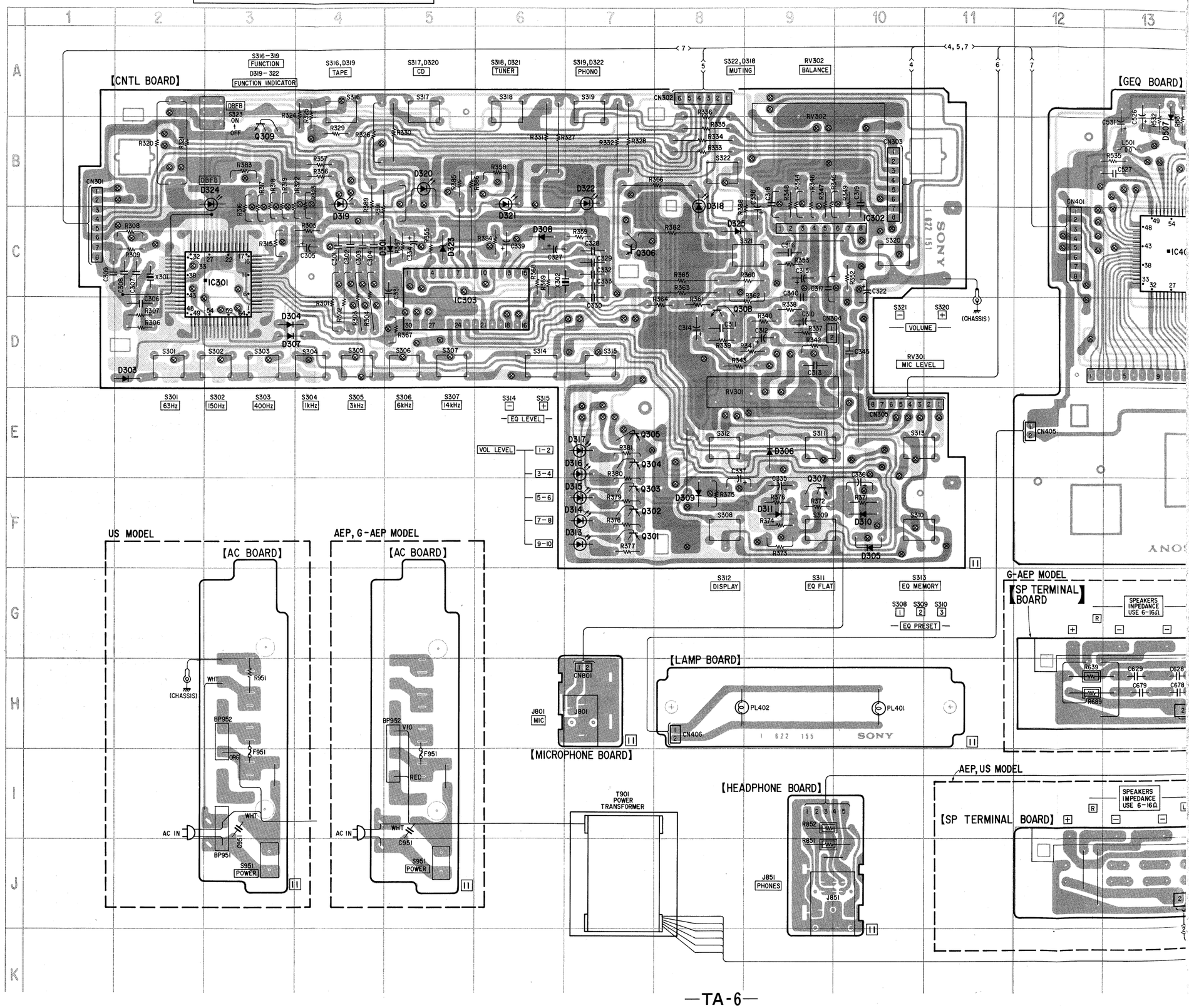
Ref. No.	Switch	Position
S301	63 Hz	OFF
S302	150 Hz	OFF
S303	400 Hz	OFF
S304	1 kHz	OFF
S305	3 kHz	OFF
S306	6 kHz	OFF
S307	14 kHz	OFF
S308	EQ PRESET 1	OFF
S309	EQ PRESET 2	OFF
S310	EQ PRESET 3	OFF
S311	EQ FLAT	OFF
S312	DISPLAY	OFF
S313	EQ MEMORY	OFF
S314	EQ LEVEL; -	OFF
S315	EQ LEVEL; +	OFF
S316	FUNCTION TAPE	OFF
S317	FUNCTION CD	OFF
S318	FUNCTION TUNER	OFF
S319	FUNCTION PHONO	OFF
S320	VOLUME; +	OFF
S321	VOLUME; -	OFF
S322	MUTING	OFF
S323	DBFB	OFF
S951	POWER	OFF

1-1. MOUNTING DIAGRAM

- See page TA-4 for note.
- See page TA-3 for semiconductor lead layouts.

• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D201	F-25	D509	D-17	Q301	F-7
D202	F-26	D510	B-19	Q302	F-7
D301	C-4	D511	C-15	Q303	F-7
D303	D-2	D601	H-21	Q304	E-7
D304	D-3	D701	I-16	Q305	E-7
D305	F-10	D901	H-24	Q306	C-7
D306	E-9	D902	H-25	Q307	F-9
D307	D-3	D903	H-24	Q308	D-8
D308	C-6	D904	H-24	Q309	B-3
D309	F-8	D905	H-24	Q401	C-19
D310	F-10	D906	H-25	Q402	C-19
D311	F-9	D907	F-25	Q403	C-20
D313	F-7	D908	F-25	Q404	C-19
D314	F-7	D909	G-26	Q405	C-17
D315	F-7	D910	F-26	Q406	C-17
D316	E-7			Q407	C-18
D317	E-7	IC101	C-24	Q408	B-20
D318	B-8	IC102	E-25	Q409	B-20
D319	C-4	IC301	C-3	Q410	A-20
D320	B-5	IC302	C-10	Q451	F-19
D321	C-6	IC303	D-5	Q452	F-19
D322	B-7	IC401	C-20	Q453	F-20
D323	C-5	IC402	E-19	Q454	F-19
D324	B-3	IC403	C-16	Q455	F-17
B325	C-8	IC404	C-13	Q456	F-18
D501	B-17	IC405	B-19	Q457	F-18
D502	B-17	IC601	I-20	Q458	B-19
D503	B-17	IC602	G-18	Q459	B-20
D504	B-15	IC701	H-16	Q601	J-20
D505	B-15	IC901	F-24	Q651	I-20
D506	B-14	IC902	F-25	Q701	I-16
D507	B-13	IC903	E-27	Q702	H-16
D508	A-19			Q751	H-16



【GEQ BOARD】

【ST CONNECTOR BOARD】

【TC CONNECTOR BOARD】

【FUNCTION BOARD】

【POWER BOARD】

【SP TERMINAL BOARD】

G-AEP MODEL

AEP, US MODEL

1-2. SCHEMATIC DIAGRAM

- See page TA-4 for note.
- See page TA-2 for IC block diagram.

【MICROPHONE BOARD】

【CNTL BOARD】

【G EQ BOARD】

【FUNCTION BOARD (1/2)】

【ST CONNECTOR BOARD】

【TC CONNECTOR BOARD】

【LAMP BOARD】

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

A B C D E F G H I J

【POWER BOARD】

【HEADPHONE BOARD】

【SP TERMINAL BOARD】

【LAMP BOARD】

【FUNCTION BOARD (1/2)】

AEP, G-AEP MODEL

【AC BOARD】

*NOT REPLACEABLE: BUILT IN TRANSFORMER

US MODEL

【AC BOARD】

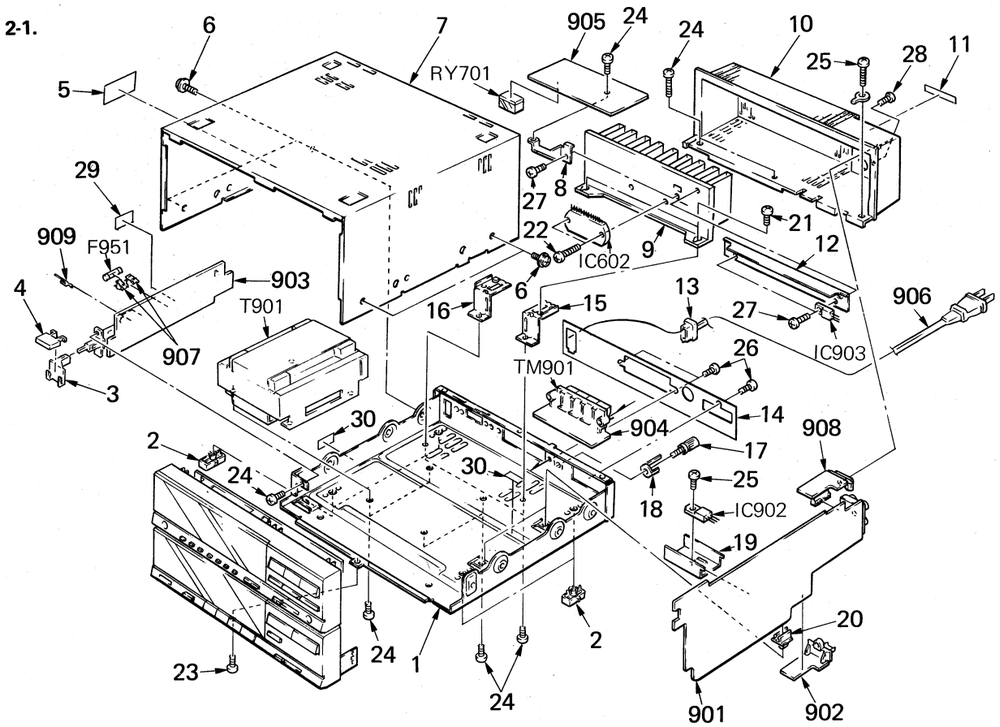
*NOT REPLACEABLE: BUILT IN TRANSFORMER

SECTION 2
EXPLODED VIEWS AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color Indication of Appearance Parts
  Example: (RED) ..... KNOB, BALANCE (WHITE)
  (RED) = Cabinet's Color; (WHITE) = Parts' Color

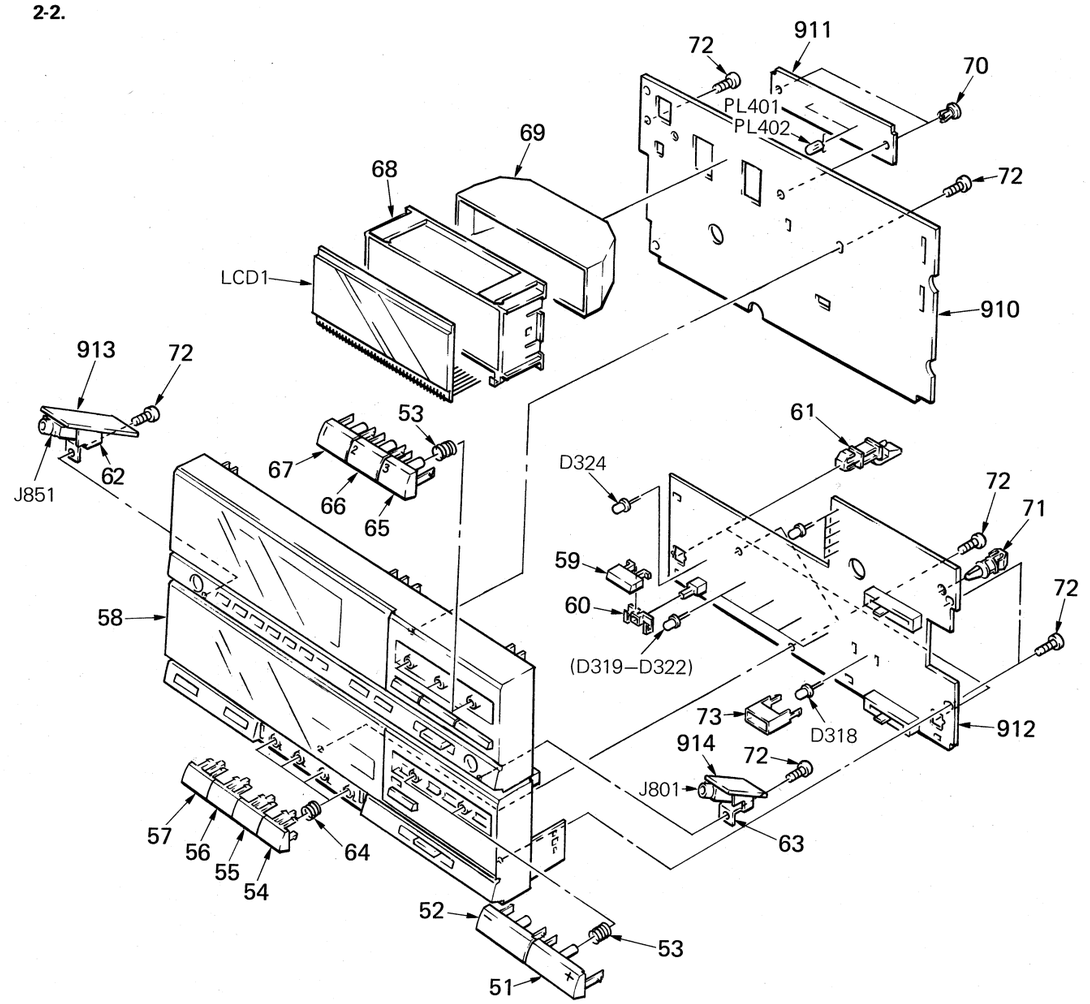
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

2-1.



No.	Part No.	Description	Remarks
1	*4-920-117-01	CHASSIS	
2	X-4902-937-1	FOOT ASSY, RUBBER	
3	*4-914-389-01	JOINT, POWER	
4	*4-914-396-01	BUTTON (POWER)	
5	*4-914-380-01	(AEP).....LABEL, MODEL NUMBER (AE1)	
	*4-914-380-11	(AEP).....LABEL, MODEL NUMBER (AE2)	
	*4-920-163-01	(US).....LABEL, MODEL NUMBER	
	*4-914-381-01	(G-AEP)...LABEL, MODEL NUMBER	
6	7-682-147-09	SCREW, M3 CASE	
7	4-920-118-01	CASE	
8	*4-910-064-01	BRACKET (H), PC BOARD	
9	*4-920-108-01	HEAT SINK	
10	*4-920-116-01	PLATE, JACK	
11	*4-910-067-81	LABEL (B), CONNECTOR	
12	*4-920-112-01	PLATE, BLOCK	
13	*3-703-244-00	BUSHING (2104), CORD	
14	*4-914-379-31	(AEP,US)...COVER, REAR	
	*4-914-379-41	(G-AEP)....COVER, REAR	
15	*4-914-394-01	BRACKET (RIGHT), HEAT SINK	
16	*4-914-393-01	BRACKET (LEFT), HEAT SINK	
17	3-706-165-00	(G-AEP)...SCREW	
18	3-701-993-00	(G-AEP)...SPACER, TERMINAL	
19	*4-880-403-00	HEAT SINK	
20	*3-642-310-00	HOLDER, CIRCUIT BOARD	
21	3-703-685-01	SCREW (+BV 3X8)	
22	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
23	7-682-546-04	SCREW +BVTT 3X5 (S)	
24	7-682-147-01	SCREW +BVTT 3X6 (S)	
25	7-682-148-01	SCREW +BVTT 3X8 (S)	
26	7-685-646-11	SCREW +BVTP 3X8 TYPE2 N-S	
27	7-685-647-71	SCREW +BVTP 3X10 TYPE2 IT-3	
28	7-685-647-11	SCREW +BVTP 3X10 TYPE2 N-S	
29	*3-701-946-24	(US)...LABEL, FUSE	
30	*3-703-044-26	(US)...LABEL, CAUTION	
901	*A-4394-426-A	(AEP).....MOUNTED PCB, POWER	
	*A-4394-433-A	(G-AEP)...MOUNTED PCB, POWER	
	*A-4394-434-A	(US).....MOUNTED PCB, POWER	
902	*1-622-161-11	PC BOARD, TC CONNECTOR	
904	*1-622-159-11	PC BOARD, SP TERMINAL	
905	*A-4388-638-A	(AEP).....MOUNTED PCB, POWER IC	
	*A-4388-667-A	(G-AEP)...MOUNTED PCB, POWER IC	
	*A-4388-677-A	(US).....MOUNTED PCB, POWER IC	
906	⚠.1-558-944-11	(AEP,G-AEP)...CORD, POWER	
	⚠.1-558-942-11	(US).....CORD, POWER	
907	1-533-162-00	HOLDER, FUSE	
908	*1-622-162-11	PC BOARD, ST CONNECTOR	
909	*1-535-476-11	(AEP,G-AEP)...TERMINAL	
F951	⚠.1-532-285-00	(AEP,G-AEP)...FUSE, TIME-LAG T1.25A	
F951	⚠.1-532-744-11	(US).....FUSE, GLASS TUBE 2.5A	
RY701	1-515-503-00	RELAY	
T901	⚠.1-448-963-11	(US).....TRANSFORMER, POWER	
T901	⚠.1-448-880-11	(G-AEP,AEP)...TRANSFORMER, POWER	
TM901	1-536-705-00	TERMINAL BOARD (SP)	

2-2.



No.	Part No.	Description	Remarks
51	4-920-105-01	BUTTON (VOLUME/+)	
52	4-920-105-11	BUTTON (VOLUME/-)	
53	3-564-333-21	SPRING, COMPRESSION	
54	4-914-387-31	BUTTON (FUNCTION) (PHONO)	
55	4-914-387-21	BUTTON (FUNCTION) (TUNER)	
56	4-914-387-11	BUTTON (FUNCTION) (CD)	
57	4-914-387-01	BUTTON (FUNCTION) (TAPE)	
58	X-4910-097-1	PANEL ASSY	
59	4-914-388-11	BUTTON (DOL)(DBFB)	
60	*4-914-390-01	JOINT, DOL	
61	*4-839-304-00	HOLDER, CIRCUIT BOARD	
62	*4-914-392-01	BRACKET, HP	
63	*4-914-391-01	BRACKET, MIC	
64	3-538-940-01	SPRING, COMPRESSION	
65	4-920-106-21	BUTTON (GE PRESET/3)	
66	4-920-106-11	BUTTON (GE PRESET/2)	
67	4-920-106-01	BUTTON (GE PRESET/1)	
68	*X-4910-090-1	ILLUMINATOR ASSY	
69	*4-920-101-01	HOUSE, LAMP	
70	4-812-134-00	RIVET NYLON, 3.5	
71	4-314-527-01	SUPPORT, PC	
72	7-685-646-11	SCREW +BVTP 3X8 TYPE2 N-S	
73	*4-904-509-01	HOLDER (B), LED	
903	*1-622-156-11	PC BOARD, AC	
910	*A-4375-303-A	(AEP,US)...MOUNTED PCB, GEQ	
	*A-4375-331-A	(G-AEP)....MOUNTED PCB, GEQ	
911	*1-622-155-11	PC BOARD, LAMP	
912	*A-4375-302-A	MOUNTED PCB, CONTROL	
913	*1-622-154-11	PC BOARD, HEADPHONE	
914	*1-622-153-11	PC BOARD, MICROPHONE	
J801	1-507-974-11	JACK	
J851	1-563-951-11	JACK	
LCD1	1-807-813-11	DISPLAY PANEL, LIQUID CRYSTAL	
PL401	1-518-527-51	LAMP, PILOT	
PL402	1-518-527-51	LAMP, PILOT	

SECTION 3
ELECTRICAL PARTS LIST

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	*A-4394-426-A	(AEP).....MOUNTED PCB, POWER
	*A-4394-433-A	(G-AEP)...MOUNTED PCB, POWER
	*A-4394-434-A	(US).....MOUNTED PCB, POWER
902	*1-622-161-11	PC BOARD, TC CONNECTOR
903	*1-622-156-11	PC BOARD, AC
904	*1-622-159-11	PC BOARD, SP TERMINAL
905	*A-4388-638-A	(AEP).....MOUNTED PCB, POWER IC
	*A-4388-667-A	(G-AEP)...MOUNTED PCB, POWER IC
	*A-4388-677-A	(US).....MOUNTED PCB, POWER IC
906	⚠1-558-944-11	(AEP,G-AEP)...CORD, POWER
	⚠1-558-942-11	(US).....CORD, POWER
907	1-533-162-00	HOLDER, FUSE
908	*1-622-162-11	PC BOARD, ST CONNECTOR
909	*1-535-476-11	(AEP,G-AEP)...TERMINAL
910	*A-4375-303-A	(AEP,US)...MOUNTED PCB, GEQ
	*A-4375-331-A	(G-AEP)....MOUNTED PCB, GEQ
911	*1-622-155-11	PC BOARD, LAMP
912	*A-4375-302-A	MOUNTED PCB, CONTROL
913	*1-622-154-11	PC BOARD, HEADPHONE
914	*1-622-153-11	PC BOARD, MICROPHONE
BP901	*1-508-830-12	H TYPE BASE POST
BP902	*1-508-830-12	H TYPE BASE POST
BP951	*1-560-595-00	(US)...TERMINAL (WITH BASE)
BP952	*1-560-595-00	(US).....TERMINAL (WITH BASE)
BP952	*1-560-595-21	(AEP,G-AEP)...TERMINAL (WITH BASE)
C101	1-162-282-31	CERAMIC 100PF 10% 50V
C102	1-162-288-31	(G-AEP)...CERAMIC 330PF 10% 50V
C103	1-162-282-31	CERAMIC 100PF 10% 50V
C104	1-124-925-11	ELECT 2.2MF 20% 50V
C105	1-130-473-00	MYLAR 0.0015MF 5% 50V
C106	1-130-480-00	MYLAR 0.0056MF 5% 50V
C107	1-124-925-11	ELECT 2.2MF 20% 50V
C108	1-124-963-11	ELECT 33MF 20% 16V
C109	1-162-282-31	CERAMIC 100PF 10% 50V
C110	1-162-282-31	CERAMIC 100PF 10% 50V
C151	1-162-282-31	CERAMIC 100PF 10% 50V
C152	1-162-288-31	(G-AEP)...CERAMIC 330PF 10% 50V
C153	1-162-282-31	CERAMIC 100PF 10% 50V
C154	1-124-925-11	ELECT 2.2MF 20% 50V
C155	1-130-473-00	MYLAR 0.0015MF 5% 50V
C156	1-130-480-00	MYLAR 0.0056MF 5% 50V
C157	1-124-925-11	ELECT 2.2MF 20% 50V
C158	1-124-963-11	ELECT 33MF 20% 16V
C159	1-162-282-31	CERAMIC 100PF 10% 50V
C160	1-162-282-31	CERAMIC 100PF 10% 50V
C201	1-124-925-11	ELECT 2.2MF 20% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C221	1-124-925-11	ELECT 2.2MF 20% 50V
C222	1-124-791-11	ELECT 1MF 20% 50V
C223	1-123-875-91	ELECT 10MF 20% 50V
C224	1-124-791-11	ELECT 1MF 20% 50V
C225	1-161-379-00	CERAMIC 0.01MF 30% 16V
C226	1-124-442-00	ELECT 330MF 20% 6.3V
C251	1-124-925-11	ELECT 2.2MF 20% 50V
C301	1-162-294-31	CERAMIC 0.001MF 10% 50V
C302	1-162-294-31	CERAMIC 0.001MF 10% 50V
C303	1-162-294-31	CERAMIC 0.001MF 10% 50V
C304	1-162-294-31	CERAMIC 0.001MF 10% 50V
C305	1-123-611-00	ELECT 1MF 20% 50V
C306	1-162-282-31	CERAMIC 100PF 10% 50V
C307	1-162-282-31	CERAMIC 100PF 10% 50V
C308	1-162-294-31	CERAMIC 0.001MF 10% 50V
C309	1-162-294-31	CERAMIC 0.001MF 10% 50V
C310	1-123-611-00	ELECT 1MF 20% 50V
C311	1-161-379-00	CERAMIC 0.01MF 30% 16V
C312	1-123-611-00	ELECT 1MF 20% 50V
C313	1-161-494-00	CERAMIC 0.022MF 25V
C314	1-123-617-00	ELECT 10MF 20% 16V
C315	1-123-617-00	ELECT 10MF 20% 16V
C316	1-162-282-31	CERAMIC 100PF 10% 50V
C317	1-162-282-31	CERAMIC 100PF 10% 50V
C318	1-162-215-31	CERAMIC 47PF 5% 50V
C319	1-162-215-31	CERAMIC 47PF 5% 50V
C322	1-123-617-00	ELECT 10MF 20% 16V
C327	1-123-617-00	ELECT 10MF 20% 16V
C328	1-161-379-00	CERAMIC 0.01MF 30% 16V
C329	1-161-379-00	CERAMIC 0.01MF 30% 16V
C330	1-161-379-00	CERAMIC 0.01MF 30% 16V
C331	1-123-617-00	ELECT 10MF 20% 16V
C332	1-162-284-31	CERAMIC 150PF 10% 50V
C333	1-162-284-31	CERAMIC 150PF 10% 50V
C334	1-123-622-00	ELECT 22MF 20% 16V
C335	1-123-617-00	ELECT 10MF 20% 16V
C336	1-123-617-00	ELECT 10MF 20% 16V
C337	1-123-611-00	ELECT 1MF 20% 50V
C338	1-123-611-00	ELECT 1MF 20% 50V
C339	1-124-463-00	ELECT 0.1MF 20% 50V
C340	1-162-294-31	CERAMIC 0.001MF 10% 50V
C345	1-161-379-00	CERAMIC 0.01MF 30% 16V
C401	1-162-282-31	CERAMIC 100PF 10% 50V
C402	1-123-611-00	ELECT 1MF 20% 50V
C403	1-123-611-00	ELECT 1MF 20% 50V
C405	1-161-375-00	CERAMIC 0.0022MF 30% 16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C406	1-162-294-31	CERAMIC 0.001MF 10% 50V
C407	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C408	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C409	1-136-155-91	FILM 0.015MF 5% 50V
C410	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C411	1-136-159-00	FILM 0.033MF 5% 50V
C412	1-136-155-91	FILM 0.015MF 5% 50V
C413	1-136-163-00	FILM 0.068MF 5% 50V
C414	1-136-159-00	FILM 0.033MF 5% 50V
C415	1-124-464-11	ELECT 0.22MF 20% 50V
C416	1-136-163-00	FILM 0.068MF 5% 50V
C417	1-123-611-00	ELECT 1MF 20% 50V
C418	1-124-463-00	ELECT 0.1MF 20% 50V
C419	1-123-617-00	ELECT 10MF 20% 16V
C420	1-123-611-00	ELECT 1MF 20% 50V
C421	1-162-282-31	CERAMIC 100PF 10% 50V
C448	1-162-282-31	(G-AEP)...CERAMIC 100PF 10% 50V
C449	1-162-596-11	CERAMIC 0.0022MF
C451	1-162-282-31	CERAMIC 100PF 10% 50V
C452	1-123-611-00	ELECT 1MF 20% 50V
C453	1-123-611-00	ELECT 1MF 20% 50V
C455	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C456	1-162-294-31	CERAMIC 0.001MF 10% 50V
C457	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C458	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C459	1-136-155-91	FILM 0.015MF 5% 50V
C460	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C461	1-136-159-00	FILM 0.033MF 5% 50V
C462	1-136-155-91	FILM 0.015MF 5% 50V
C463	1-136-163-00	FILM 0.068MF 5% 50V
C464	1-136-159-00	FILM 0.033MF 5% 50V
C465	1-124-464-11	ELECT 0.22MF 20% 50V
C466	1-136-163-00	FILM 0.068MF 5% 50V
C467	1-123-611-00	ELECT 1MF 20% 50V
C468	1-124-463-00	ELECT 0.1MF 20% 50V
C469	1-123-617-00	ELECT 10MF 20% 16V
C470	1-123-611-00	ELECT 1MF 20% 50V
C471	1-162-282-31	CERAMIC 100PF 10% 50V
C498	1-162-282-31	(G-AEP)...CERAMIC 100PF 10% 50V
C499	1-162-596-11	CERAMIC 0.0022MF
C501	1-123-617-00	ELECT 10MF 20% 16V
C502	1-123-617-00	ELECT 10MF 20% 16V
C503	1-123-622-00	ELECT 22MF 20% 16V
C504	1-123-622-00	ELECT 22MF 20% 16V
C505	1-124-236-00	ELECT 47MF 20% 16V
C506	1-123-617-00	ELECT 10MF 20% 16V
C507	1-123-617-00	ELECT 10MF 20% 16V
C508	1-124-463-00	ELECT 0.1MF 20% 50V
C509	1-124-465-00	ELECT 0.47MF 20% 50V
C510	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C511	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C512	1-136-163-00	FILM 0.068MF 5% 50V
C513	1-124-463-00	ELECT 0.1MF 20% 50V
C514	1-136-159-00	FILM 0.033MF 5% 50V
C515	1-124-463-00	ELECT 0.1MF 20% 50V
C516	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C517	1-161-329-00	CERAMIC 0.0068MF 30% 16V
C518	1-124-465-00	ELECT 0.47MF 20% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C519	1-162-292-31	CERAMIC 680PF 10% 50V
C520	1-162-292-31	CERAMIC 680PF 10% 50V
C521	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C522	1-124-464-11	ELECT 0.22MF 20% 50V
C523	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C524	1-124-464-11	ELECT 0.22MF 20% 50V
C525	1-162-294-31	CERAMIC 0.001MF 10% 50V
C526	1-124-465-00	ELECT 0.47MF 20% 50V
C527	1-162-288-31	CERAMIC 330PF 10% 50V
C528	1-161-379-00	CERAMIC 0.01MF 30% 16V
C529	1-123-622-00	ELECT 22MF 20% 16V
C530	1-123-617-00	ELECT 10MF 20% 16V
C531	1-123-617-00	ELECT 10MF 20% 16V
C532	1-123-617-00	ELECT 10MF 20% 16V
C551	1-162-294-31	CERAMIC 0.001MF 10% 50V
C552	1-162-294-31	CERAMIC 0.001MF 10% 50V
C553	1-162-294-31	CERAMIC 0.001MF 10% 50V
C601	1-136-165-00	FILM 0.1MF 5% 50V
C602	1-136-165-00	FILM 0.1MF 5% 50V
C603	1-124-791-11	ELECT 1MF 20% 50V
C604	1-123-617-00	ELECT 10MF 20% 16V
C605	1-162-282-31	CERAMIC 100PF 10% 50V
C606	1-162-288-31	CERAMIC 330PF 10% 50V
C610	1-124-963-11	ELECT 33MF 20% 16V
C611	1-124-598-11	ELECT 22MF 20% 25V
C612	1-124-463-00	ELECT 0.1MF 20% 50V
C621	1-124-791-11	ELECT 1MF 20% 50V
C622	1-162-282-31	CERAMIC 100PF 10% 50V
C623	1-162-282-31	CERAMIC 100PF 10% 50V
C624	1-124-122-11	ELECT 100MF 20% 50V
C625	1-124-910-11	ELECT 47MF 20% 50V
C626	1-136-165-00	FILM 0.1MF 5% 50V
C627	1-136-165-00	FILM 0.1MF 5% 50V
C628	1-136-165-00	(G-AEP)...FILM 0.1MF 5% 50V
C629	1-136-165-00	(G-AEP)...FILM 0.1MF 5% 50V
C630	1-123-875-91	ELECT 10MF 20% 50V
C631	1-124-122-11	ELECT 100MF 20% 50V
C632	1-123-875-91	ELECT 10MF 20% 50V
C634	1-161-323-11	(G-AEP)...CERAMIC 1000PF 10% 50V
C651	1-136-165-00	FILM 0.1MF 5% 50V
C652	1-136-165-00	FILM 0.1MF 5% 50V
C653	1-124-791-11	ELECT 1MF 20% 50V
C654	1-123-617-00	ELECT 10MF 20% 16V
C655	1-162-282-31	CERAMIC 100PF 10% 50V
C656	1-162-288-31	CERAMIC 330PF 10% 50V
C671	1-124-791-11	ELECT 1MF 20% 50V
C672	1-162-282-31	CERAMIC 100PF 10% 50V
C673	1-162-282-31	CERAMIC 100PF 10% 50V
C674	1-124-122-11	ELECT 100MF 20% 50V
C675	1-124-910-11	ELECT 47MF 20% 50V
C676	1-136-165-00	FILM 0.1MF 5% 50V
C677	1-136-165-00	FILM 0.1MF 5% 50V
C678	1-136-165-00	(G-AEP)...FILM 0.1MF 5% 50V
C679	1-136-165-00	(G-AEP)...FILM 0.1MF 5% 50V
C701	1-124-927-11	ELECT 4.7MF 20% 50V
C702	1-123-321-00	ELECT 220MF 20% 16V
C703	1-123-321-00	ELECT 220MF 20% 16V

TA-211

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C704	1-161-379-00	CERAMIC	0.01MF	30%	16V
C705	1-161-494-00	CERAMIC	0.022MF		25V
C706	1-124-910-11	ELECT	47MF	20%	50V
C751	1-124-927-11	ELECT	4.7MF	20%	50V
C901	1-124-362-00	(G-AEP,AEP)...ELECT	4700MF	20%	42V
C901	1-126-240-11	(US).....ELECT	6800MF	20%	35V
C902	1-124-362-00	(G-AEP,AEP)...ELECT	4700MF	20%	42V
C902	1-126-240-11	(US).....ELECT	6800MF	20%	35V
C903	1-124-927-11	ELECT	4.7MF	20%	50V
C904	1-136-165-00	FILM	0.1MF	5%	50V
C905	1-136-165-00	FILM	0.1MF	5%	50V
C906	1-123-875-91	ELECT	10MF	20%	50V
C907	1-123-875-91	ELECT	10MF	20%	50V
C908	1-124-563-11	ELECT	2200MF	20%	25V
C909	1-124-563-11	ELECT	2200MF	20%	25V
C910	1-136-153-00	FILM	0.01MF	5%	50V
C911	1-136-153-00	FILM	0.01MF	5%	50V
C912	1-101-006-00	CERAMIC	0.047MF		50V
C913	1-101-006-00	CERAMIC	0.047MF		50V
C951 ⚠	1-161-742-00	CERAMIC	0.0022MF	20%	400V
CN101	1-562-479-12	SOCKET, CONNECTOR 10P			
CN102	1-564-610-21	CONNECTOR, BOARD TO BOARD			
CN103	1-562-479-12	SOCKET, CONNECTOR 10P			
CN104	1-564-610-21	CONNECTOR, BOARD TO BOARD			
CN201	*1-564-499-11	PIN, CONNECTOR 6P			
CN202	*1-564-501-11	PIN, CONNECTOR 8P			
CN203	*1-564-500-11	PIN, CONNECTOR 7P			
CN401	*1-564-501-11	PIN, CONNECTOR 8P			
CN403	*1-564-501-11	PIN, CONNECTOR 8P			
CN405	*1-564-495-11	PIN, CONNECTOR 2P			
CN601	*1-564-497-11	PIN, CONNECTOR 4P			
CN602	*1-564-521-11	PLUG, CONNECTOR 6P			
CN603	*1-564-517-11	PLUG, CONNECTOR 2P			
CN604	*1-564-520-11	PLUG, CONNECTOR 5P			
CN801	*1-564-495-11	PIN, CONNECTOR 2P			
CN901	*1-564-517-21	PLUG, CONNECTOR 2P			
D201	8-719-000-26	DIODE US1060M			
D202	8-719-000-26	DIODE US1060M			
D301	8-719-000-26	DIODE US1060M			
D303	8-719-000-26	DIODE US1060M			
D304	8-719-000-26	DIODE US1060M			
D305	8-719-000-26	DIODE US1060M			
D306	8-719-000-26	DIODE US1060M			
D307	8-719-000-26	DIODE US1060M			
D308	8-719-000-26	DIODE US1060M			
D309	8-719-000-26	DIODE US1060M			
D310	8-719-000-26	DIODE US1060M			
D311	8-719-000-26	DIODE US1060M			
D313	8-719-301-60	DIODE SEL2910A-C			
D314	8-719-301-60	DIODE SEL2910A-C			
D315	8-719-301-60	DIODE SEL2910A-C			
D316	8-719-301-60	DIODE SEL2910A-C			
D317	8-719-301-60	DIODE SEL2910A-C			
D318	8-719-301-60	DIODE SEL2910A-C			
D319	8-719-301-48	DIODE SEL2413E-D			
D320	8-719-301-48	DIODE SEL2413E-D			
D321	8-719-301-48	DIODE SEL2413E-D			
D322	8-719-301-48	DIODE SEL2413E-D			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D323	8-719-933-38	DIODE HZS6B3L
D324	8-719-302-87	DIODE SEL2913K-C
D325	8-719-000-26	DIODE US1060M
D501	8-719-000-26	DIODE US1060M
D502	8-719-000-26	DIODE US1060M
D503	8-719-000-26	DIODE US1060M
D504	8-719-000-26	DIODE US1060M
D505	8-719-000-26	DIODE US1060M
D506	8-719-000-26	DIODE US1060M
D507	8-719-000-26	DIODE US1060M
D508	8-719-000-26	DIODE US1060M
D509	8-719-000-26	DIODE US1060M
D510	8-719-000-26	DIODE US1060M
D511	8-719-109-81	DIODE RD4.7ES-B2
D601	8-719-000-26	DIODE US1060M
D701	8-719-000-26	DIODE US1060M
D901	8-719-302-38	DIODE RBV-602-01
D902	8-719-000-26	DIODE US1060M
D903	8-719-200-77	DIODE 10E2N
D904	8-719-200-77	DIODE 10E2N
D905	8-719-200-77	DIODE 10E2N
D906	8-719-200-77	DIODE 10E2N
D907	8-719-000-26	DIODE US1060M
D908	8-719-000-26	DIODE US1060M
D909	8-719-000-26	DIODE US1060M
D910	8-719-000-26	DIODE US1060M
DP101	*1-562-251-00	SOCKET, CONNECTOR 6P
F101 ⚠	1-532-778-21	(US)...FUSE, MICRO (SECONDARY) 1.6A
F601 ⚠	1-532-783-21	(US)...FUSE, MICRO (SECONDARY) 5.0A
F901 ⚠	1-532-783-21	(US)...FUSE, MICRO (SECONDARY) 5.0A
F902 ⚠	1-532-783-21	(US)...FUSE, MICRO (SECONDARY) 5.0A
F951 ⚠	1-532-285-00	(AEP,G-AEP)...FUSE, TIME-LAG T1.25A
F951 ⚠	1-532-744-11	(US).....FUSE, GLASS TUBE 2.5A
IC101	8-759-600-02	IC M5218L
IC102	8-759-800-33	IC LC7815H
IC301	8-759-804-48	IC LC7060AN
IC302	8-759-600-02	IC M5218L
IC303	8-759-602-60	IC M50765-440SP
IC401	8-759-600-02	IC M5218L
IC402	8-759-804-49	IC LC7522
IC403	8-759-113-18	IC UPC4574C
IC404	8-759-804-50	IC LC7560
IC405	8-759-204-30	IC TC9176P
IC601	8-759-600-02	IC M5218L
IC602	8-749-941-52	IC STK4152II
IC701	8-759-111-68	IC UPC1237HA
IC901	8-759-604-XX	IC M5F78M06
IC902	8-759-604-32	IC M5F7810
IC903	8-759-604-50	IC M5F7910
ICP101	1-532-841-21	(AEP,G-AEP)...LINK, IC
ICP901	1-532-846-21	(G-AEP,AEP)...LINK, IC
ICP902	1-532-846-21	(G-AEP,AEP)...LINK, IC
J101	1-507-908-11	JACK, PIN 4P
J801	1-507-974-11	JACK
J851	1-563-951-11	JACK
L501	1-410-564-41	MICRO INDUCTOR 100UH
L601	1-410-397-21	(G-AEP)...FERRITE BEAD INDUCTOR 1.1UH
L651	1-410-397-21	(G-AEP)...FERRITE BEAD INDUCTOR 1.1UH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
LCD1	1-807-813-11	DISPLAY PANEL, LIQUID CRYSTAL
PL401	1-518-527-51	LAMP, PILOT
PL402	1-518-527-51	LAMP, PILOT
Q301	8-729-117-54	TRANSISTOR 2SA1175
Q302	8-729-117-54	TRANSISTOR 2SA1175
Q303	8-729-117-54	TRANSISTOR 2SA1175
Q304	8-729-117-54	TRANSISTOR 2SA1175
Q305	8-729-117-54	TRANSISTOR 2SA1175
Q306	8-729-117-54	TRANSISTOR 2SA1175
Q307	8-729-600-27	TRANSISTOR 2SC634SP
Q308	8-729-600-27	TRANSISTOR 2SC634SP
Q309	8-729-600-27	TRANSISTOR 2SC634SP
Q401	8-729-600-27	TRANSISTOR 2SC634SP
Q402	8-729-600-27	TRANSISTOR 2SC634SP
Q403	8-729-600-27	TRANSISTOR 2SC634SP
Q404	8-729-600-27	TRANSISTOR 2SC634SP
Q405	8-729-600-27	TRANSISTOR 2SC634SP
Q406	8-729-600-27	TRANSISTOR 2SC634SP
Q407	8-729-600-27	TRANSISTOR 2SC634SP
Q408	8-729-600-08	TRANSISTOR 2SK381-E
Q409	8-729-600-27	TRANSISTOR 2SC634SP
Q410	8-729-611-53	TRANSISTOR 2SA1115-F
Q451	8-729-600-27	TRANSISTOR 2SC634SP
Q452	8-729-600-27	TRANSISTOR 2SC634SP
Q453	8-729-600-27	TRANSISTOR 2SC634SP
Q454	8-729-600-27	TRANSISTOR 2SC634SP
Q455	8-729-600-27	TRANSISTOR 2SC634SP
Q456	8-729-600-27	TRANSISTOR 2SC634SP
Q457	8-729-600-27	TRANSISTOR 2SC634SP
Q458	8-729-600-08	TRANSISTOR 2SK381-E
Q459	8-729-600-27	TRANSISTOR 2SC634SP
Q601	8-729-600-27	TRANSISTOR 2SC634SP
Q651	8-729-600-27	TRANSISTOR 2SC634SP
Q701	8-729-108-05	TRANSISTOR 2SC1841-PA
Q702	8-729-117-54	TRANSISTOR 2SA1175
Q751	8-729-108-05	TRANSISTOR 2SC1841-PA
R101	1-249-417-11	CARBON 1K 5% 1/6W
R102	1-249-417-11	CARBON 1K 5% 1/6W
R103	1-249-438-11	CARBON 56K 5% 1/6W
R104	1-249-418-11	CARBON 1.2K 5% 1/6W
R105	1-249-437-11	CARBON 47K 5% 1/6W
R106	1-215-487-00	CARBON 560K 5% 1/6W
R107	1-249-421-11	CARBON 2.2K 5% 1/6W
R108	1-249-411-11	CARBON 330 5% 1/6W
R109	1-249-433-11	CARBON 22K 5% 1/6W
R151	1-249-417-11	CARBON 1K 5% 1/6W
R152	1-249-417-11	CARBON 1K 5% 1/6W
R153	1-249-438-11	CARBON 56K 5% 1/6W
R154	1-249-418-11	CARBON 1.2K 5% 1/6W
R155	1-249-437-11	CARBON 47K 5% 1/6W
R156	1-215-487-00	CARBON 560K 5% 1/6W
R157	1-249-421-11	CARBON 2.2K 5% 1/6W
R158	1-249-411-11	CARBON 330 5% 1/6W
R159	1-249-433-11	CARBON 22K 5% 1/6W
R201	1-215-481-00	CARBON 330K 5% 1/6W
R202	1-215-481-00	CARBON 330K 5% 1/6W
R203	1-249-429-11	CARBON 10K 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R204	1-215-481-00	CARBON	330K	5%	1/6W
R206	1-249-417-11	CARBON	1K	5%	1/6W
R207	1-249-428-11	CARBON	8.2K	5%	1/6W
R208	1-249-417-11	CARBON	1K	5%	1/6W
R209	1-249-430-11	CARBON	12K	5%	1/6W
R210	1-249-429-11	CARBON	10K	5%	1/6W
R211	1-249-429-11	CARBON	10K	5%	1/6W
R212	1-249-433-11	CARBON	22K	5%	1/6W
R221	1-249-441-11	CARBON	100K	5%	1/6W
R222	1-249-417-11	CARBON	1K	5%	1/6W
R223	1-215-485-00	CARBON	470K	5%	1/6W
R224	1-215-485-00	CARBON	470K	5%	1/6W
R225	1-215-481-00	CARBON	330K	5%	1/6W
R226	1-249-421-11	CARBON	2.2K	5%	1/6W
R251	1-215-481-00	CARBON	330K	5%	1/6W
R252	1-215-481-00	CARBON	330K	5%	1/6W
R253	1-249-429-11	CARBON	10K	5%	1/6W
R254	1-215-481-00	CARBON	330K	5%	1/6W
R256	1-249-417-11	CARBON	1K	5%	1/6W
R257	1-249-428-11	CARBON	8.2K	5%	1/6W
R258	1-249-417-11	CARBON	1K	5%	1/6W
R259	1-249-430-11	CARBON	12K	5%	1/6W
R301	1-249-429-11	CARBON	10K	5%	1/6W
R302	1-249-429-11	CARBON	10K	5%	1/6W
R303	1-249-429-11	CARBON	10K	5%	1/6W
R304	1-249-429-11	CARBON	10K	5%	1/6W
R305	1-249-441-11	CARBON	100K	5%	1/6W
R306	1-215-493-00	CARBON	1M	5%	1/6W
R307	1-249-425-11	CARBON	4.7K	5%	1/6W
R308	1-249-429-11	CARBON	10K	5%	1/6W
R309	1-249-429-11	CARBON	10K	5%	1/6W
R315	1-249-417-11	CARBON	1K	5%	1/6W
R316	1-249-441-11	CARBON	100K	5%	1/6W
R317	1-249-441-11	CARBON	100K	5%	1/6W
R318	1-249-441-11	CARBON	100K	5%	1/6W
R319	1-249-441-11	CARBON	100K	5%	1/6W
R320	1-249-417-11	CARBON	1K	5%	1/6W
R321	1-249-417-11	CARBON	1K	5%	1/6W
R322	1-249 417-11	CARBON	1K	5%	1/6W
R323	1-249-417-11	CARBON	1K	5%	1/6W
R324	1-249-414-11	CARBON	560	5%	1/6W
R325	1-249-429-11	CARBON	10K	5%	1/6W
R326	1-249-429-11	CARBON	10K	5%	1/6W
R327	1-249-429-11	CARBON	10K	5%	1/6W
R328	1-249-429-11	CARBON	10K	5%	1/6W
R329	1-249-423-11	CARBON	3.3K	5%	1/6W
R330	1-249-423-11	CARBON	3.3K	5%	1/6W
R331	1-249-423-11	CARBON	3.3K	5%	1/6W
R332	1-249-423-11	CARBON	3.3K	5%	1/6W
R333	1-249-429-11	CARBON	10K	5%	1/6W
R334	1-249-429-11	CARBON	10K	5%	1/6W
R335	1-249-429-11	CARBON	10K	5%	1/6W
R336	1-249-429-11	CARBON	10K	5%	1/6W
R337	1-249-429-11	CARBON	10K	5%	1/6W
R338	1-249-415-11	CARBON	680	5%	1/6W
R339	1-249-433-11	CARBON	22K	5%	1/6W
R340	1-249-441-11	CARBON	100K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R341	1-249-425-11	CARBON	4.7K	5%	1/6W
R342	1-249-429-11	CARBON	10K	5%	1/6W
R343	1-249-417-11	CARBON	1K	5%	1/6W
R344	1-249-434-11	CARBON	27K	5%	1/6W
R345	1-249-434-11	CARBON	27K	5%	1/6W
R346	1-247-849-00	CARBON	5.6K	5%	1/6W
R347	1-247-849-00	CARBON	5.6K	5%	1/6W
R348	1-249-438-11	CARBON	56K	5%	1/6W
R349	1-249-438-11	CARBON	56K	5%	1/6W
R352	1-249-409-11	CARBON	220	5%	1/6W
R353	1-249-409-11	CARBON	220	5%	1/6W
R355	1-249-429-11	CARBON	10K	5%	1/6W
R356	1-249-429-11	CARBON	10K	5%	1/6W
R357	1-249-429-11	CARBON	10K	5%	1/6W
R358	1-249-429-11	CARBON	10K	5%	1/6W
R359	1-249-429-11	CARBON	10K	5%	1/6W
R360	1-249-429-11	CARBON	10K	5%	1/6W
R361	1-249-429-11	CARBON	10K	5%	1/6W
R362	1-249-429-11	CARBON	10K	5%	1/6W
R363	1-249-429-11	CARBON	10K	5%	1/6W
R364	1-249-429-11	CARBON	10K	5%	1/6W
R365	1-249-429-11	CARBON	10K	5%	1/6W
R366	1-249-410-11	CARBON	270	5%	1/6W
R367	1-249-441-11	CARBON	100K	5%	1/6W
R368	1-249-423-11	CARBON	3.3K	5%	1/6W
R369	1-215-493-00	CARBON	1M	5%	1/6W
R371	1-249-433-11	CARBON	22K	5%	1/6W
R372	1-249-429-11	CARBON	10K	5%	1/6W
R373	1-249-425-11	CARBON	4.7K	5%	1/6W
R374	1-249-409-11	CARBON	220	5%	1/6W
R375	1-249-441-11	CARBON	100K	5%	1/6W
R376	1-249-441-11	CARBON	100K	5%	1/6W
R377	1-249-410-11	CARBON	270	5%	1/6W
R378	1-249-410-11	CARBON	270	5%	1/6W
R379	1-249-410-11	CARBON	270	5%	1/6W
R380	1-249-410-11	CARBON	270	5%	1/6W
R381	1-249-410-11	CARBON	270	5%	1/6W
R382	1-249-417-11	CARBON	1K	5%	1/6W
R383	1-249-441-11	CARBON	100K	5%	1/6W
R384	1-249-429-11	CARBON	10K	5%	1/6W
R385	1-249-429-11	CARBON	10K	5%	1/6W
R386	1-249-429-11	CARBON	10K	5%	1/6W
R387	1-249-413-11	CARBON	470	5%	1/6W
R388	1-215-493-00	CARBON	1M	5%	1/6W
R389	1-249-417-11	CARBON	1K	5%	1/6W
R391	1-249-429-11	CARBON	10K	5%	1/6W
R401	1-249-429-11	CARBON	10K	5%	1/6W
R402	1-215-493-00	CARBON	1M	5%	1/6W
R403	1-249-429-11	CARBON	10K	5%	1/6W
R405	1-249-430-11	CARBON	12K	5%	1/6W
R406	1-249-416-11	CARBON	820	5%	1/6W
R407	1-249-441-11	CARBON	100K	5%	1/6W
R408	1-215-493-00	CARBON	1M	5%	1/6W
R409	1-247-847-11	CARBON	4.7K	5%	1/6W
R409	1-215-485-00	CARBON	470K	5%	1/6W
R410	1-215-485-00	CARBON	470K	5%	1/6W
R411	1-249-430-11	CARBON	12K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R412	1-249-416-11	CARBON	820	5%	1/6W
R413	1-249-441-11	CARBON	100K	5%	1/6W
R414	1-215-493-00	CARBON	1M	5%	1/6W
R415	1-249-430-11	CARBON	12K	5%	1/6W
R416	1-249-413-11	CARBON	470	5%	1/6W
R417	1-249-441-11	CARBON	100K	5%	1/6W
R418	1-215-493-00	CARBON	1M	5%	1/6W
R419	1-249-430-11	CARBON	12K	5%	1/6W
R420	1-249-414-11	CARBON	560	5%	1/6W
R421	1-249-441-11	CARBON	100K	5%	1/6W
R422	1-215-493-00	CARBON	1M	5%	1/6W
R423	1-249-430-11	CARBON	12K	5%	1/6W
R424	1-249-415-11	CARBON	680	5%	1/6W
R425	1-249-441-11	CARBON	100K	5%	1/6W
R426	1-215-493-00	CARBON	1M	5%	1/6W
R427	1-249-430-11	CARBON	12K	5%	1/6W
R428	1-249-415-11	CARBON	680	5%	1/6W
R429	1-249-441-11	CARBON	100K	5%	1/6W
R430	1-215-493-00	CARBON	1M	5%	1/6W
R431	1-249-430-11	CARBON	12K	5%	1/6W
R432	1-249-415-11	CARBON	680	5%	1/6W
R433	1-249-441-11	CARBON	100K	5%	1/6W
R434	1-215-485-00	CARBON	470K	5%	1/6W
R435	1-215-485-00	CARBON	470K	5%	1/6W
R436	1-215-485-00	CARBON	470K	5%	1/6W
R437	1-215-493-00	CARBON	1M	5%	1/6W
R438	1-249-421-11	CARBON	2.2K	5%	1/6W
R439	1-215-477-00	CARBON	220K	5%	1/6W
R440	1-249-435-11	CARBON	33K	5%	1/6W
R441	1-249-425-11	CARBON	4.7K	5%	1/6W
R449	1-249-425-11	CARBON	4.7K	5%	1/6W
R451	1-249-429-11	CARBON	10K	5%	1/6W
R452	1-215-493-00	CARBON	1M	5%	1/6W
R453	1-249-429-11	CARBON	10K	5%	1/6W
R455	1-249-430-11	CARBON	12K	5%	1/6W
R456	1-249-416-11	CARBON	820	5%	1/6W
R457	1-249-441-11	CARBON	100K	5%	1/6W
R458	1-215-493-00	CARBON	1M	5%	1/6W
R459	1-215-485-00	CARBON	470K	5%	1/6W
R460	1-215-485-00	CARBON	470K	5%	1/6W
R461	1-249-430-11	CARBON	12K	5%	1/6W
R462	1-249-416-11	CARBON	820	5%	1/6W
R463	1-249-441-11	CARBON	100K	5%	1/6W
R464	1-215-493-00	CARBON	1M	5%	1/6W
R465	1-249-430-11	CARBON	12K	5%	1/6W
R466	1-249-413-11	CARBON	470	5%	1/6W
R467	1-249-441-11	CARBON	100K	5%	1/6W
R468	1-215-493-00	CARBON	1M	5%	1/6W
R469	1-249-430-11	CARBON	12K	5%	1/6W
R470	1-249-414-11	CARBON	560	5%	1/6W
R471	1-249-441-11	CARBON	100K	5%	1/6W
R472	1-215-493-00	CARBON	1M	5%	1/6W
R473	1-249-430-11	CARBON	12K	5%	1/6W
R474	1-249-415-11	CARBON	680	5%	1/6W
R475	1-249-441-11	CARBON	100K	5%	1/6W
R476	1-215-493-00	CARBON	1M	5%	1/6W
R477	1-249-430-11	CARBON	12K	5%	1/6W
R478	1-249-415-11	CARBON	680	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R479	1-249-441-11	CARBON	100K	5%	1/6W
R480	1-215-493-00	CARBON	1M	5%	1/6W
R481	1-249-430-11	CARBON	12K	5%	1/6W
R482	1-249-415-11	CARBON	680	5%	1/6W
R483	1-249-441-11	CARBON	100K	5%	1/6W
R484	1-215-485-00	CARBON	470K	5%	1/6W
R485	1-215-485-00	CARBON	470K	5%	1/6W
R486	1-215-485-00	CARBON	470K	5%	1/6W
R487	1-215-493-00	CARBON	1M	5%	1/6W
R488	1-249-421-11	CARBON	2.2K	5%	1/6W
R489	1-215-477-00	CARBON	220K	5%	1/6W
R490	1-249-435-11	CARBON	33K	5%	1/6W
R491	1-249-425-11	CARBON	4.7K	5%	1/6W
R499	1-247-847-00	CARBON	4.7K	5%	1/6W
R501	1-249-409-11	CARBON	220	5%	1/6W
R502	1-249-409-11	CARBON	220	5%	1/6W
R505	1-249-429-11	CARBON	10K	5%	1/6W
R506	1-249-429-11	CARBON	10K	5%	1/6W
R507	1-249-437-11	CARBON	47K	5%	1/6W
R508	1-249-437-11	CARBON	47K	5%	1/6W
R509	1-215-485-00	CARBON	470K	5%	1/6W
R510	1-249-431-11	CARBON	15K	5%	1/6W
R511	1-215-493-00	CARBON	1M	5%	1/6W
R512	1-249-439-11	CARBON	68K	5%	1/6W
R513	1-249-435-11	CARBON	33K	5%	1/6W
R514	1-215-485-00	CARBON	470K	5%	1/6W
R515	1-249-432-11	CARBON	18K	5%	1/6W
R516	1-215-493-00	CARBON	1M	5%	1/6W
R517	1-249-430-11	CARBON	12K	5%	1/6W
R518	1-215-493-00	CARBON	1M	5%	1/6W
R519	1-249-438-11	CARBON	56K	5%	1/6W
R520	1-249-424-11	CARBON	3.9K	5%	1/6W
R521	1-215-473-00	CARBON	150K	5%	1/6W
R522	1-249-409-11	CARBON	220	5%	1/6W
R523	1-215-493-00	CARBON	1M	5%	1/6W
R524	1-249-436-11	CARBON	39K	5%	1/6W
R525	1-249-432-11	CARBON	18K	5%	1/6W
R526	1-215-479-00	CARBON	270K	5%	1/6W
R527	1-249-431-11	CARBON	15K	5%	1/6W
R528	1-215-493-00	CARBON	1M	5%	1/6W
R529	1-249-429-11	CARBON	10K	5%	1/6W
R530	1-215-493-00	CARBON	1M	5%	1/6W
R531	1-249-432-11	CARBON	18K	5%	1/6W
R532	1-215-493-00	CARBON	1M	5%	1/6W
R535	1-215-493-00	CARBON	1M	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R536	1-215-481-00	CARBON	330K	5%	1/6W
R537	1-215-493-00	CARBON	1M	5%	1/6W
R538	1-215-477-00	CARBON	220K	5%	1/6W
R544	1-249-411-11	CARBON	330	5%	1/6W
R551	1-247-849-00	CARBON	5.6K	5%	1/6W
R601	1-249-431-11	CARBON	15K	5%	1/6W
R602	1-249-421-11	CARBON	2.2K	5%	1/6W
R603	1-215-485-00	CARBON	470K	5%	1/6W
R604	1-249-421-11	CARBON	2.2K	5%	1/6W
R605	1-249-425-11	CARBON	4.7K	5%	1/6W
R606	1-215-493-00	CARBON	1M	5%	1/6W
R607	1-249-429-11	CARBON	10K	5%	1/6W
R608	1-249-429-11	CARBON	10K	5%	1/6W
R619	1-249-417-11	CARBON	1K	5%	1/6W
R620	1-249-417-11	CARBON	1K	5%	1/6W
R621	1-249-414-11	CARBON	560	5%	1/6W
R622	1-249-441-11	CARBON	100K	5%	1/6W
R623	1-215-493-00	CARBON	1M	5%	1/6W
R624	1-249-429-11	CARBON	10K	5%	1/6W
R631	1-249-425-11	CARBON	4.7K	5%	1/6W
R632	1-249-438-11	CARBON	56K	5%	1/6W
R633	1-249-438-11	CARBON	56K	5%	1/6W
R634	1-249-414-11	CARBON	560	5%	1/6W
R635	1-247-756-11	CARBON	2.2K	5%	1/2W
R636	1-247-756-11	CARBON	2.2K	5%	1/2W
R637 ⚠	1-247-727-11	CARBON	10	5%	1/2W F
R638	1-249-420-11	CARBON	1.8K	5%	1/6W
R639 ⚠	1-247-727-11	(G-AEP)...CARBON	10	5%	1/2W F
R640	1-247-752-11	CARBON	1K	5%	1/2W
R641	1-247-752-11	CARBON	1K	5%	1/2W
R642 ⚠	1-212-881-61	FUSIBLE	100	5%	1/4W F
R643 ⚠	1-212-881-61	FUSIBLE	100	5%	1/4W F
R651	1-249-431-11	CARBON	15K	5%	1/6W
R652	1-249-421-11	CARBON	2.2K	5%	1/6W
R653	1-215-485-00	CARBON	470K	5%	1/6W
R654	1-249-421-11	CARBON	2.2K	5%	1/6W
R655	1-249-425-11	CARBON	4.7K	5%	1/6W
R656	1-215-493-00	CARBON	1M	5%	1/6W
R657	1-249-429-11	CARBON	10K	5%	1/6W
R658	1-247-855-00	CARBON	10K	5%	1/6W
R681	1-249-425-11	CARBON	4.7K	5%	1/6W
R682	1-249-438-11	CARBON	56K	5%	1/6W
R683	1-249-438-11	CARBON	56K	5%	1/6W
R684	1-249-414-11	CARBON	560	5%	1/6W
R685	1-247-756-11	CARBON	2.2K	5%	1/2W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R686	1-247-756-11	CARBON	2.2K	5%	1/2W
R687 ⚠	1-247-727-11	CARBON	10	5%	1/2W F
R688	1-249-420-11	CARBON	1.8K	5%	1/6W
R689 ⚠	1-247-727-11	(G-AEP)...CARBON	10	5%	1/2W F
R701	1-217-151-00	RES, METAL PLATE 0.22			
R702	1-249-414-11	CARBON	560	5%	1/6W
R703	1-249-414-11	CARBON	560	5%	1/6W
R704	1-215-471-00	CARBON	120K	5%	1/6W
R705	1-249-441-11	CARBON	100K	5%	1/6W
R706	1-249-433-11	CARBON	22K	5%	1/6W
R707	1-249-429-11	CARBON	10K	5%	1/6W
R708	1-249-433-11	CARBON	22K	5%	1/6W
R709	1-249-433-11	CARBON	22K	5%	1/6W
R710 ⚠	1-247-744-11	CARBON	270	5%	1/2W F
R711	1-249-429-11	CARBON	10K	5%	1/6W
R712	1-249-437-11	CARBON	47K	5%	1/6W
R751	1-217-151-00	RES, METAL PLATE 0.22			
R752	1-249-414-11	CARBON	560	5%	1/6W
R753	1-249-414-11	CARBON	560	5%	1/6W
R754	1-215-471-00	CARBON	120K	5%	1/6W
R851 ⚠	1-247-236-00	CARBON	680	5%	1/2W F
R852 ⚠	1-247-236-00	CARBON	680	5%	1/2W F
R901	1-247-849-00	CARBON	5.6K	5%	1/6W
R902 ⚠	1-213-078-61	FUSIBLE	56	5%	1W F
R951 ⚠	1-202-723-00	RES,SOLID	2.2M	10%	1/2W
RV301	1-237-646-11	RES, VAR, SLIDE 50K (MIC LEVEL)			
RV302	1-237-647-11	RES, VAR, SLIDE 100K (BALANCE)			
RY701	1-515-503-00	RELAY			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
S301	1-554-303-21	SWITCH, KEY BOARD (63Hz)
S302	1-554-303-21	SWITCH, KEY BOARD (150Hz)
S303	1-554-303-21	SWITCH, KEY BOARD (400Hz)
S304	1-554-303-21	SWITCH, KEY BOARD (1kHz)
S305	1-554-303-21	SWITCH, KEY BOARD (3kHz)
S306	1-554-303-21	SWITCH, KEY BOARD (6kHz)
S307	1-554-303-21	SWITCH, KEY BOARD (14kHz)
S308	1-554-303-21	SWITCH, KEY BOARD (EQ PRESET 1)
S309	1-554-303-21	SWITCH, KEY BOARD (EQ PRESET 2)
S310	1-554-303-21	SWITCH, KEY BOARD (EQ PRESET 3)
S311	1-554-303-21	SWITCH, KEY BOARD (EQ FLAT)
S312	1-554-303-21	SWITCH, KEY BOARD (DISPLAY)
S313	1-554-303-21	SWITCH, KEY BOARD (EQ MEMORY)
S314	1-554-303-21	SWITCH, KEY BOARD (EQ LEVEL:-)
S315	1-554-303-21	SWITCH, KEY BOARD (EQ LEVEL:+)
S316	1-554-303-21	SWITCH, KEY BOARD (TAPE)
S317	1-554-303-21	SWITCH, KEY BOARD (CD)
S318	1-554-303-21	SWITCH, KEY BOARD (TUNER)
S319	1-554-303-21	SWITCH, KEY BOARD (PHONO)
S320	1-554-303-21	SWITCH, KEY BOARD (VOLUME:+)
S321	1-554-303-21	SWITCH, KEY BOARD (VOLUME:-)
S322	1-554-303-21	SWITCH, KEY BOARD (MUTING)
S323	1-554-419-00	SWITCH, PUSH (1 KEY)(DBFB)
S951 ⚠	1-553-318-00	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
T901 ⚠	1-448-963-11	(US).....TRANSFORMER, POWER
T901 ⚠	1-448-880-11	(G-AEP,AEP)..TRANSFORMER, POWER
TM901	1-536-705-00	TERMINAL BOARD (SP)
X301	1-527-532-00	OSCILLATOR, CERAMIC
X302	1-527-532-00	OSCILLATOR, CERAMIC

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

FH-211W

STEREO DOUBLE CASSETTE DECK
(TC-211W)

US Model
AEP Model

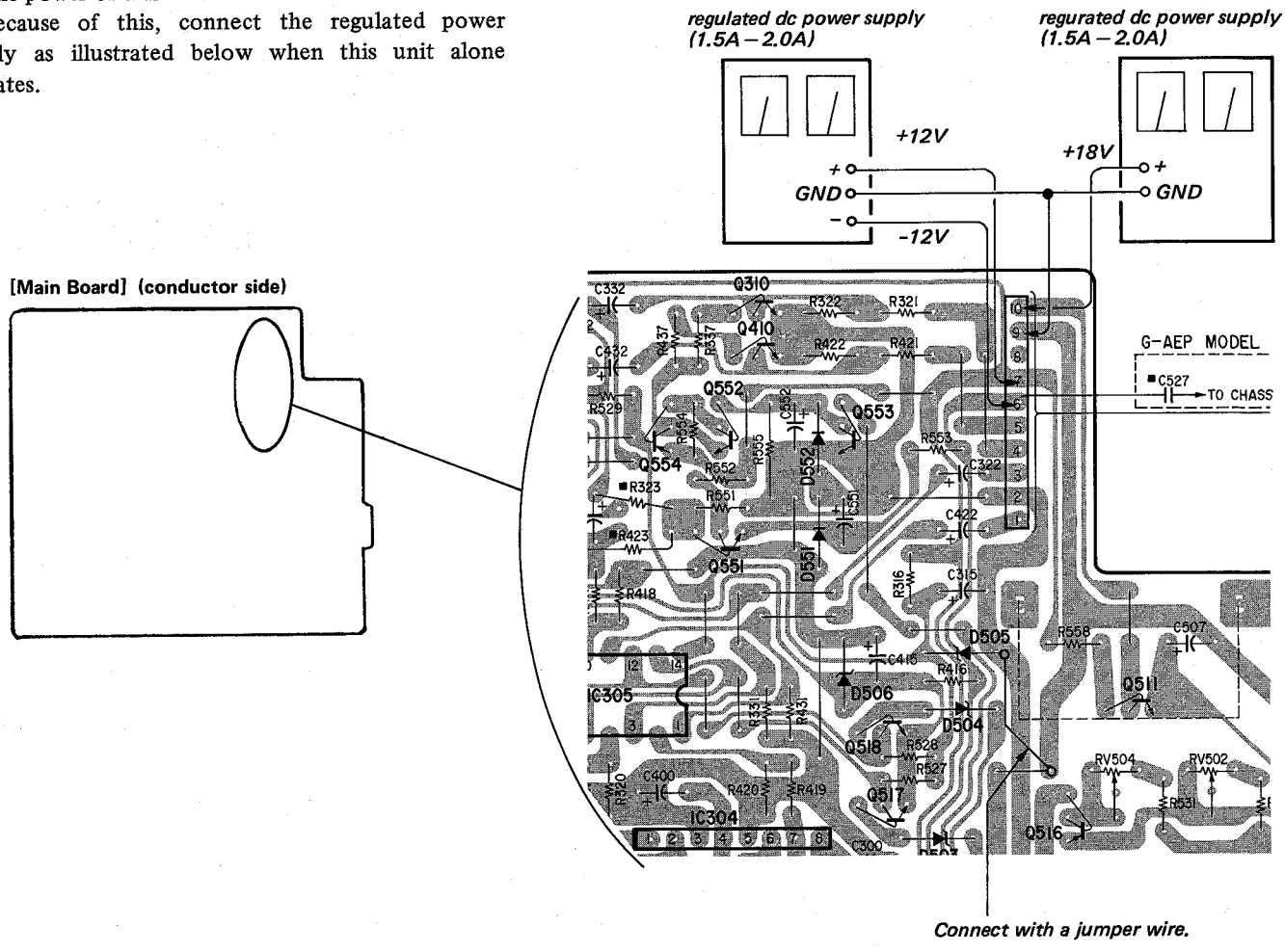
Model Name Using Similar Mechanism	DECK A: DXA-205W
	DECK B: DXA-205W
Tape Transport Mechanism Type	DECK A: YM47CW-26
	DECK B: YM47CW-27

REPAIRING PRECAUTION

[To apply B+ voltage]

The power of this unit is fed from TA-211.

Because of this, connect the regulated power supply as illustrated below when this unit alone operates.



SECTION 1
ADJUSTMENTS

1-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

   record/playback/erase head rubber belts
   capstan
   pinch roller
   idlers

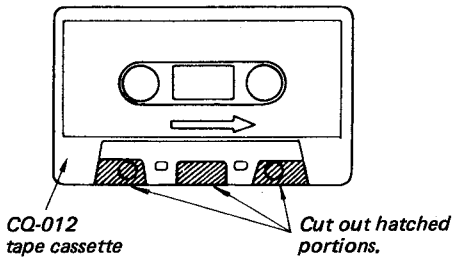
2. Demagnetize the head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compoound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

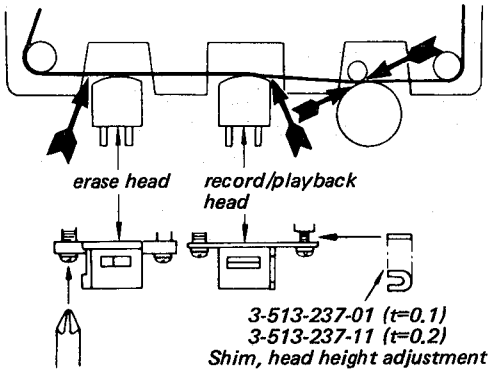
Torque	Torque meter	Meter reading
FWD	CQ-102C	30 – 70 g•cm (0.42 – 0.98 oz•inch)
FWD Back tension	CQ-102C	1.5 – 5.5 g•cm (0.02 – 0.08 oz•inch)
FF, REW	CQ-201B	more than 63 g•cm (more than 0.88 oz•inch)

Head Height Adjustment

1. Prepare an adjustment cassette as shown below.



2. In playback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions of arrow.



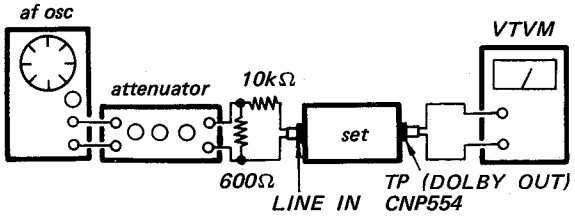
1-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual
The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
  DOLBY NR switch: OFF
  ISS switch: 1

- Standard Record:
  Deliver the standard input signal level to the input jack and control the attenuator to obtain the standard output signal level.

– Record Mode –



Standard Input Level

	LINE IN
source impedance	10kΩ
input level	0.25V (-10dB)

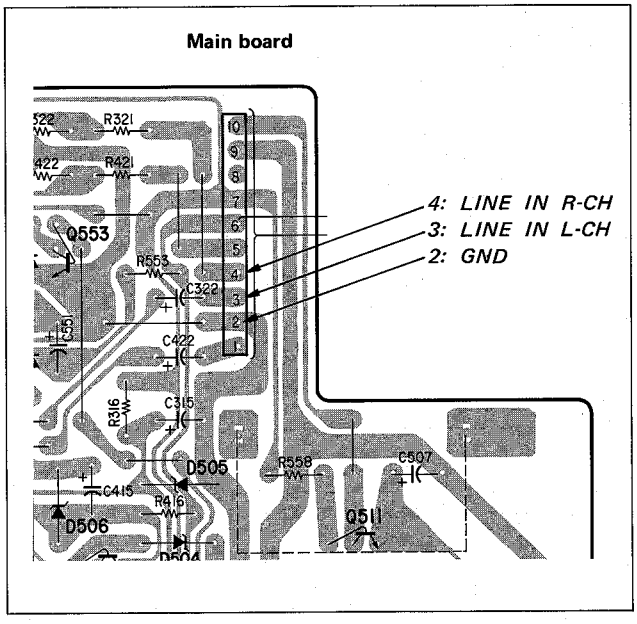
Standard Output Level

	TP (DOLBY OUT) CNP554
load impedance	NONE
output level	0.4V (-5.7dB)

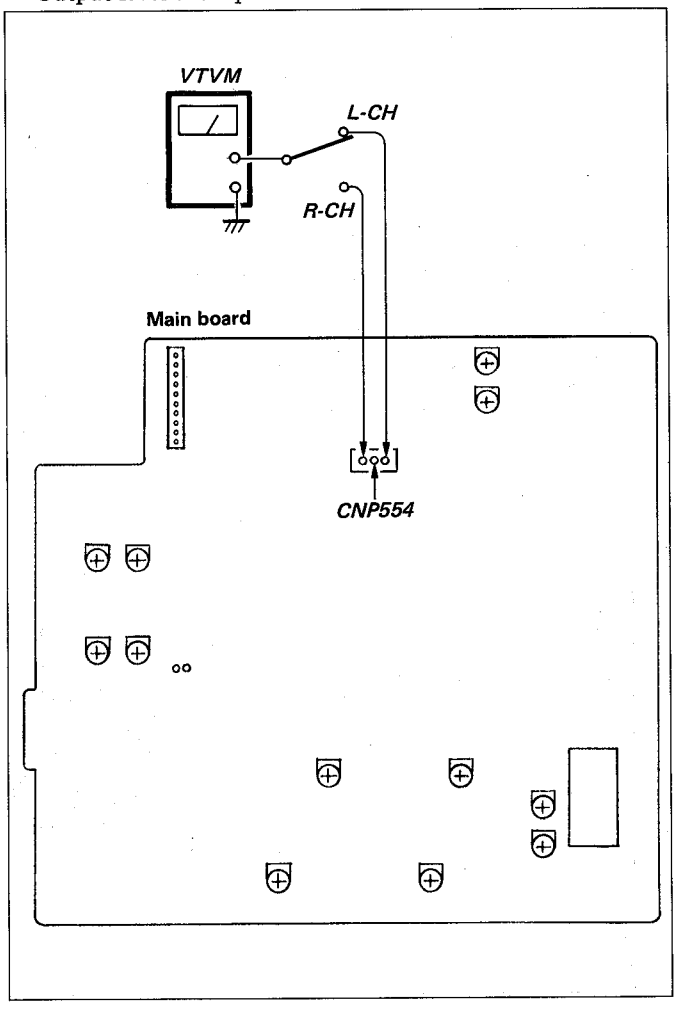
Test Tape

Type	Signal	Used for
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-A063	6.3 kHz, -10 dB	Azimuth Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

- Locations of LINE IN.



- Output level checkpoint

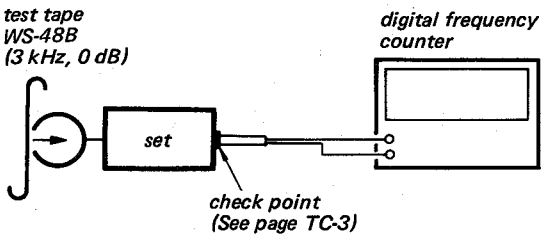


Tape Speed Adjustment DECK A DECK B

Procedure:

Mode: playback

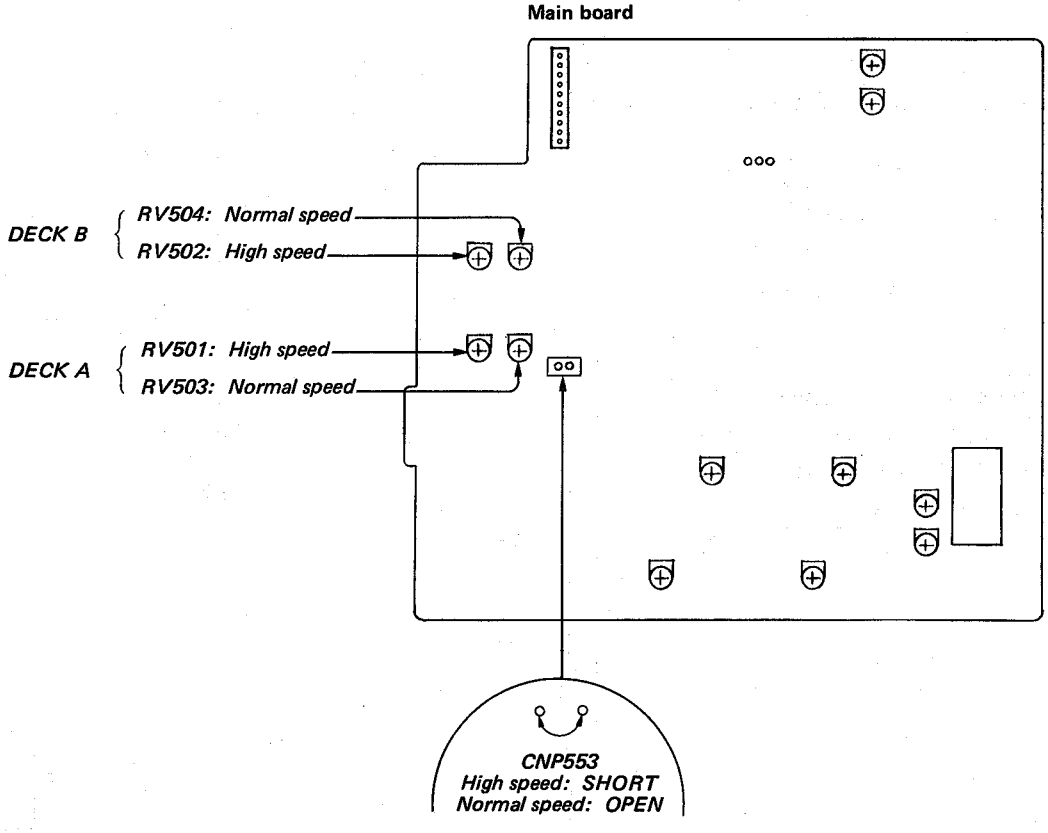
Perform high speed adjustment before normal speed adjustment.



Specifications:

	Adjustment part		Test pin (CNP553)	Ditital frequency counter
Normal speed	Deck A	RV503	OPEN	2,970 to 2,990 Hz
	Deck B	RV504		
High speed	Deck A	RV501	SHORT	5,950 to 6,010 Hz
	Deck B	RV502		

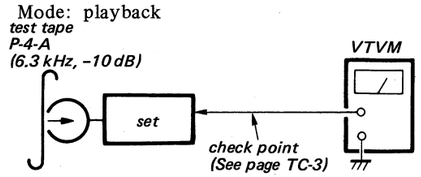
Ajustment Location: Main board



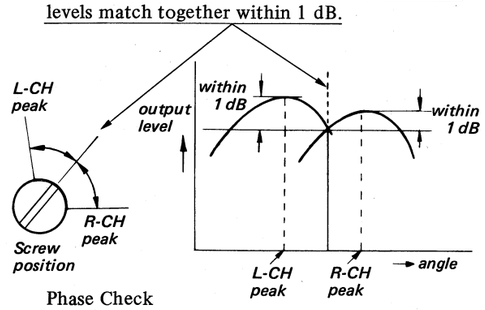
Record/playback Head Azimuth Adjustment DECK A DECK B

Procedure:

1. Mode: playback

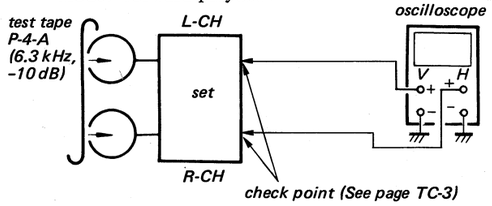


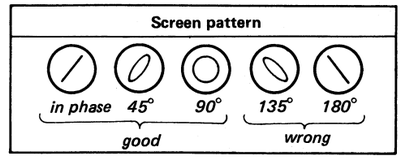
2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.



Phase Check

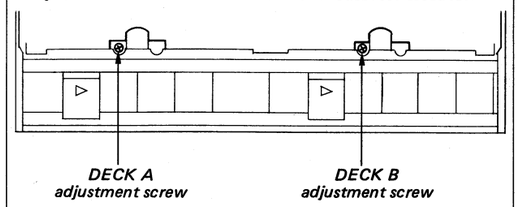
Mode: forward playback





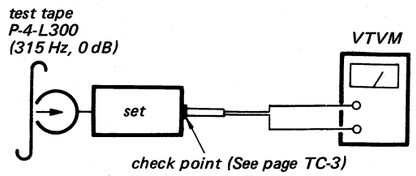
3. Set in the reverse mode and repeat the steps 1-2.
4. After the adjustment, lock the screws with locking compound.

Adjustment Location: Remove the Cassette holder.



Playback Level Adjustment DECK A DECK B

Procedure:



Adjust { DECK A: RV301 (L-CH), RV401 (R-CH) / DECK B: RV302 (L-CH), RV402 (R-CH) } so that the specifications are satisfied.

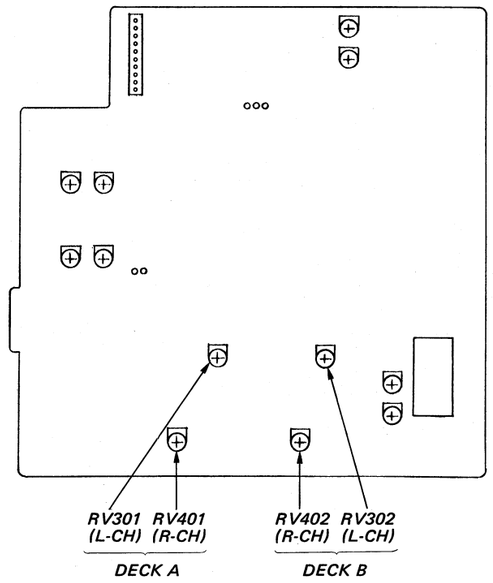
Specification

Check point (see page TC-3) level: 0.37 to 0.43V (–6.2 dB to –5.2 dB)

Level difference between channels:

less than 0.5 dB check that the check point level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: Main Board



Record Bias Adjustment DECK B

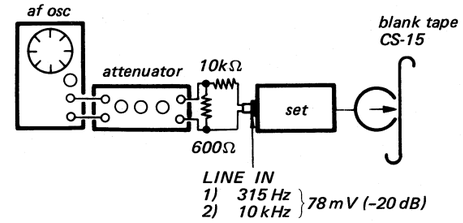
Setting:

- ATTENUATOR: standard record (See page TC-3)

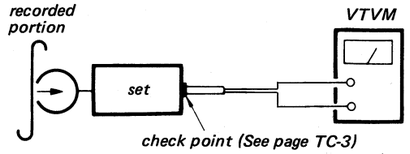
Procedure:

See page TC-3 for location of LINE IN.

1. Mode: record

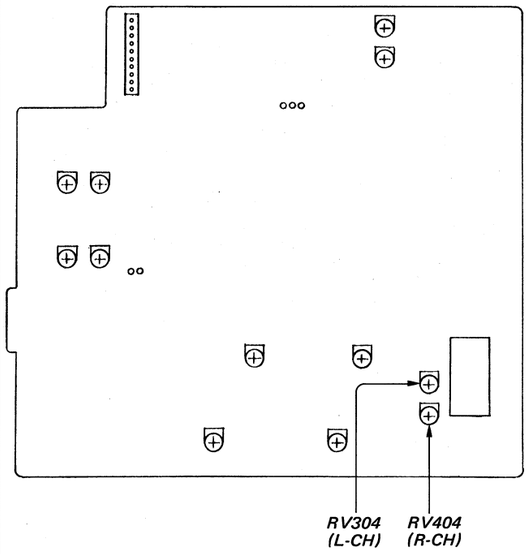


2. Mode: playback



Confirm that the 10 kHz playback output is –0.5 dB to 0.5 dB relative to the 315 Hz output. If necessary, adjust RV304 (L-CH), RV404 (R-CH) and repeat the steps given above.

Adjustment Location: Main Board



Record Level Adjustmen

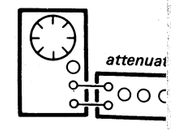
Setting:

- ATTENUATOR: sta (S

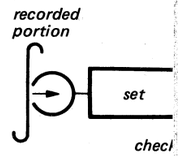
Procedure:

See page TC-3 for

1. Mode: record



2. Mode: playback

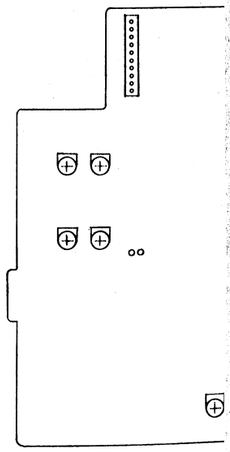


3. Playback the signal Confirm that the specification belov (L-CH), RV403 (1 – 3.

Specification:

Check point (see 0.43V (–6.2 dB to

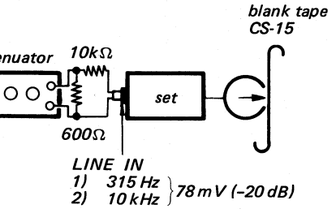
Adjustment Location: M



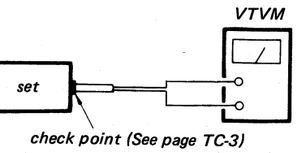
ment DECK B

: standard record
(See page TC-3)

3 for location of LINE IN.

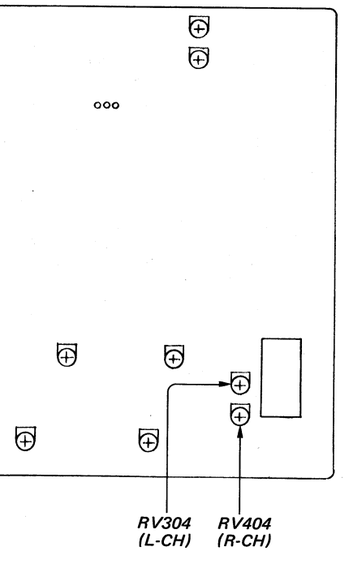


ack



the 10 kHz playback output is
5 dB relative to the 315 Hz out-
ry, adjust RV304 (L-CH), RV404
peat the steps given above.

n: Main Board



Record Level Adjustment DECK B

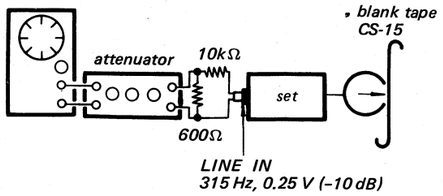
Setting:

- ATTENUATOR: standard record
(See page TC-3)

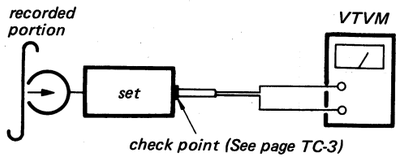
Procedure:

See page TC-3 for location of LINE IN.

1. Mode: record



2. Mode: playback

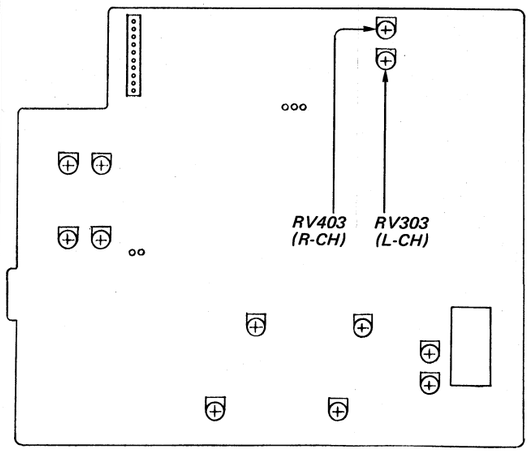


3. Playback the signal recorded in step 1. Confirm that the signal level is within the specification below. If necessary, adjust RV303 (L-CH), RV403 (R-CH) and repeat the steps 1 – 3.

Specification:

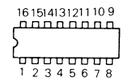
Check point (see page TC-3) level: 0.37V to 0.43V (-6.2 dB to -5.2 dB)

Adjustment Location: Main Board

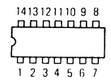


● SEMICONDUCTOR LEAD LAYOUTS

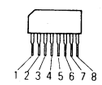
CXA1101P



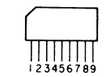
M4066BP



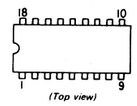
M5218L



μPC4570HA



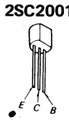
μPD65005C-112



2SA1175

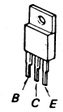
2SC634SP
2SC3400

2SC2001

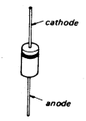


2SD774

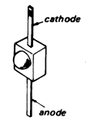
2SD1585-K



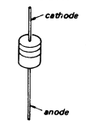
HZ3CLL
HZ6B2L
HZ6C2L



PR2222S-B1



US1060M



SECTION 2 DIAGRAMS

2-1. MOUNTING DIAGRAM

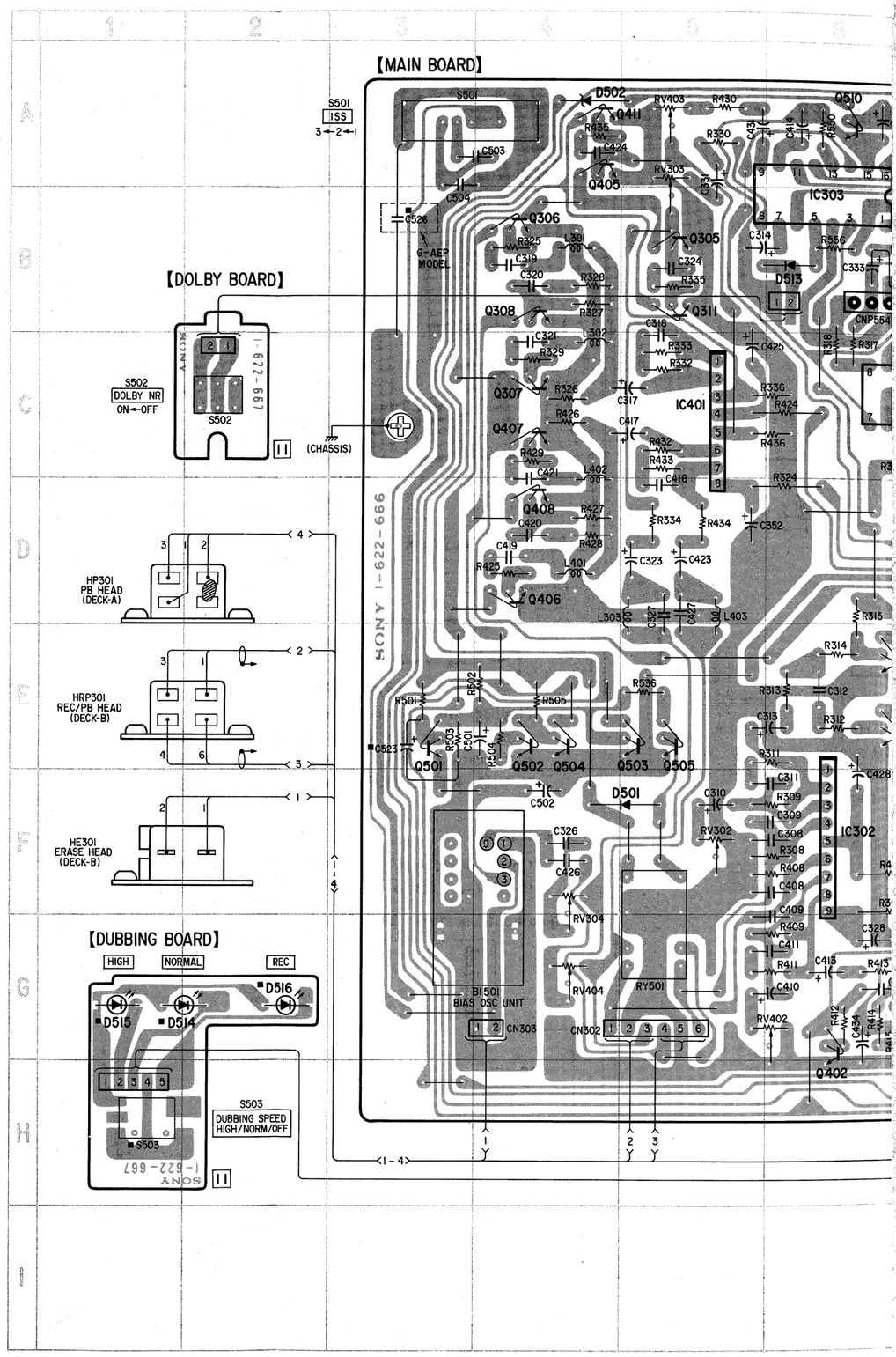
• See page TC-7 semiconductor lead layouts.

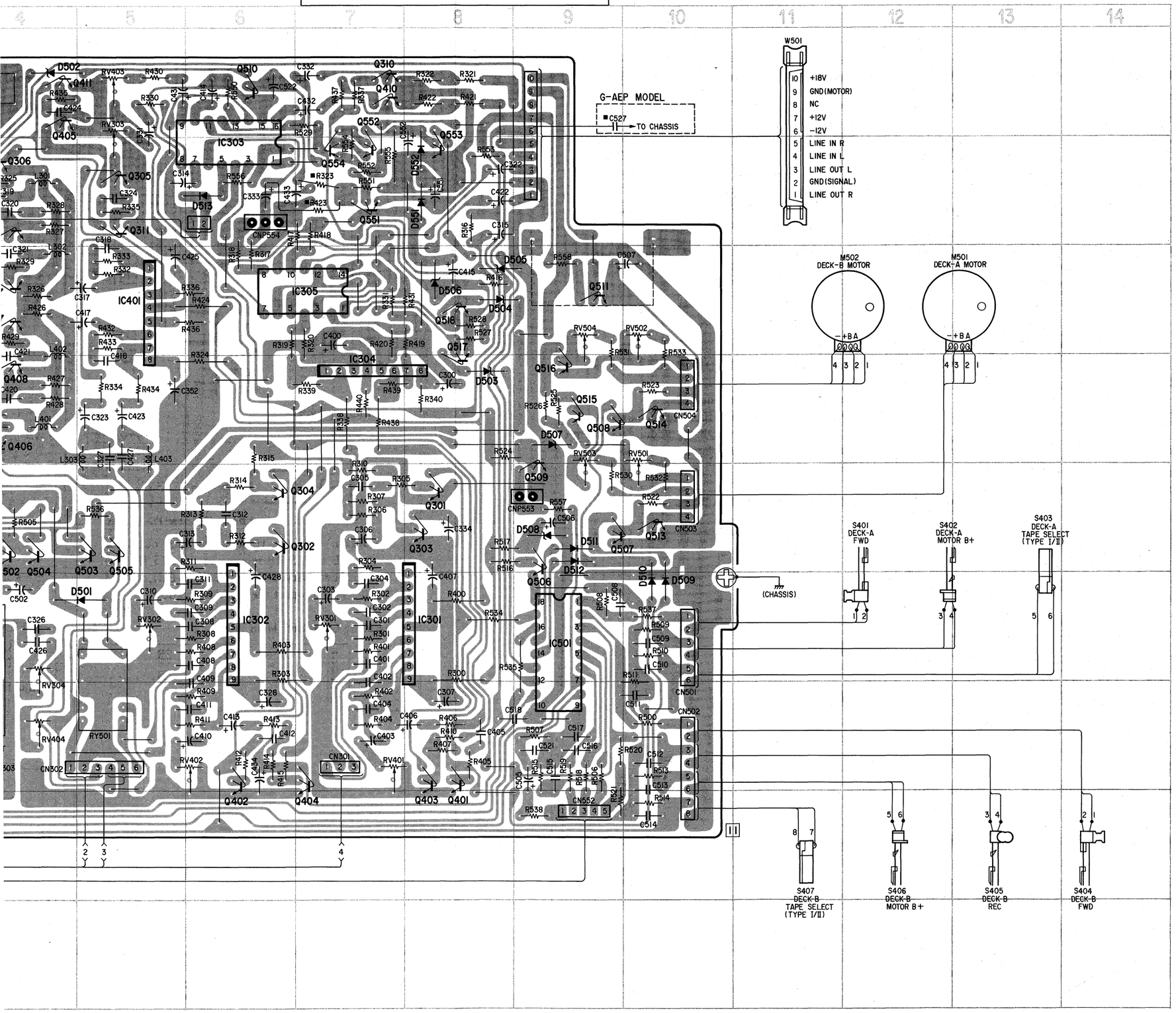
• SEMICONDUCTOR LOCATIONS

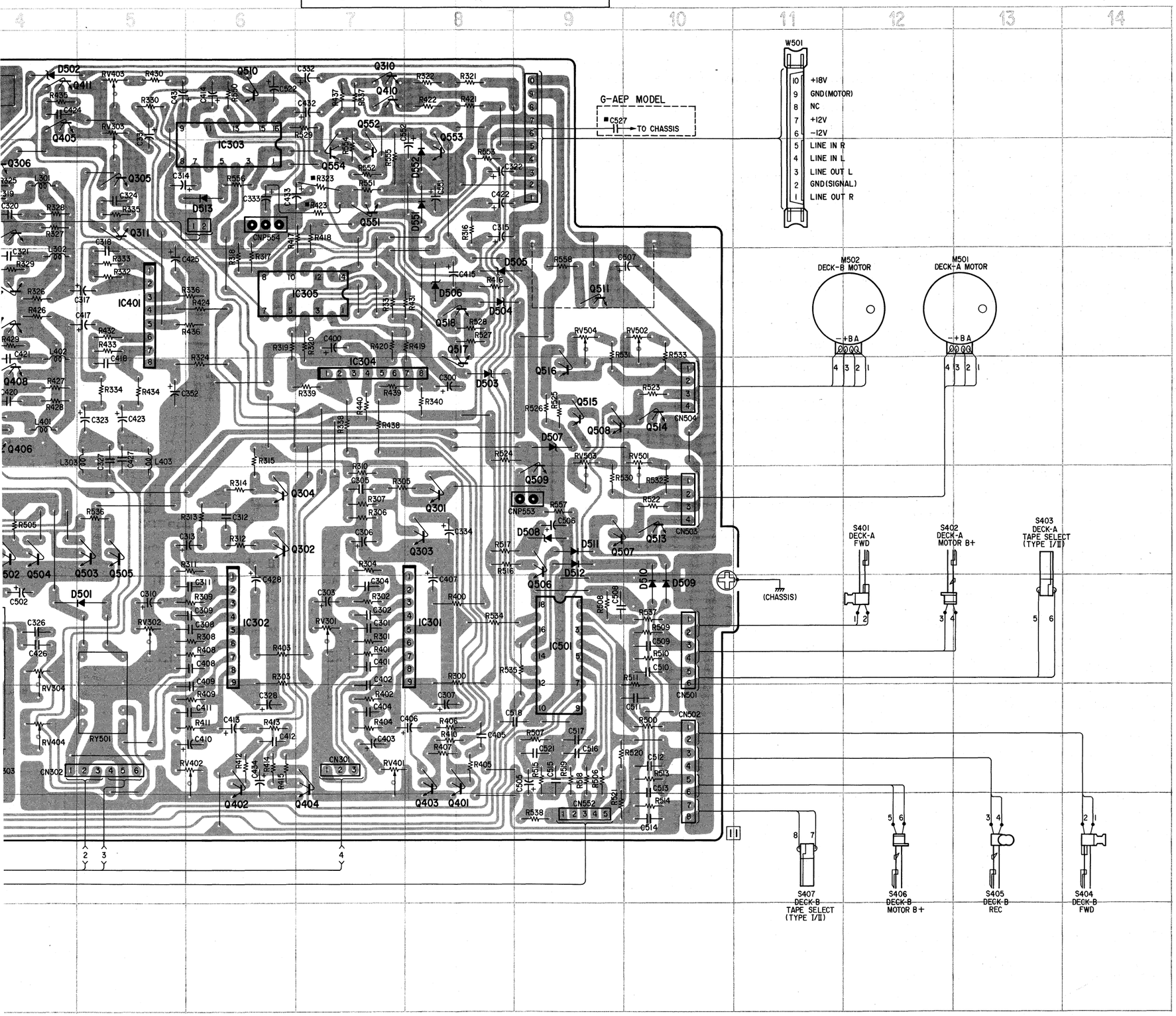
Ref. No.	Location	Ref. No.	Location
D501	F-5	Q308	B-4
D502	A-4	Q310	A-7
D503	D-8	Q311	B-5
D504	C-8	Q401	H-8
D505	C-8	Q402	H-6
D506	C-8	Q403	H-8
D507	D-9	Q404	H-7
D508	E-9	Q305	A-4
D509	F-10	Q406	D-4
D510	F-10	Q407	C-4
D511	E-9	Q408	D-4
D512	E-9	Q410	A-7
D513	B-6	Q411	A-5
D514	G-1	Q501	E-3
D515	G-1	Q502	E-4
D516	G-2	Q503	E-5
D551	B-8	Q504	E-4
D552	B-8	Q505	E-5
		Q506	F-9
IC301	F-8	Q507	E-9
IC302	F-6	Q508	D-9
IC303	B-6	Q509	E-9
IC304	D-7	Q510	A-6
IC305	C-7	Q511	C-9
IC401	C-5	Q513	E-10
IC501	F-9	Q514	D-10
		Q515	D-9
Q301	E-8	Q516	D-9
Q302	E-7	Q517	C-8
Q303	E-8	Q518	C-8
Q304	E-7	Q551	B-7
Q305	B-5	Q552	A-7
Q306	B-4	Q553	A-8
Q307	C-4	Q554	B-7

Note:

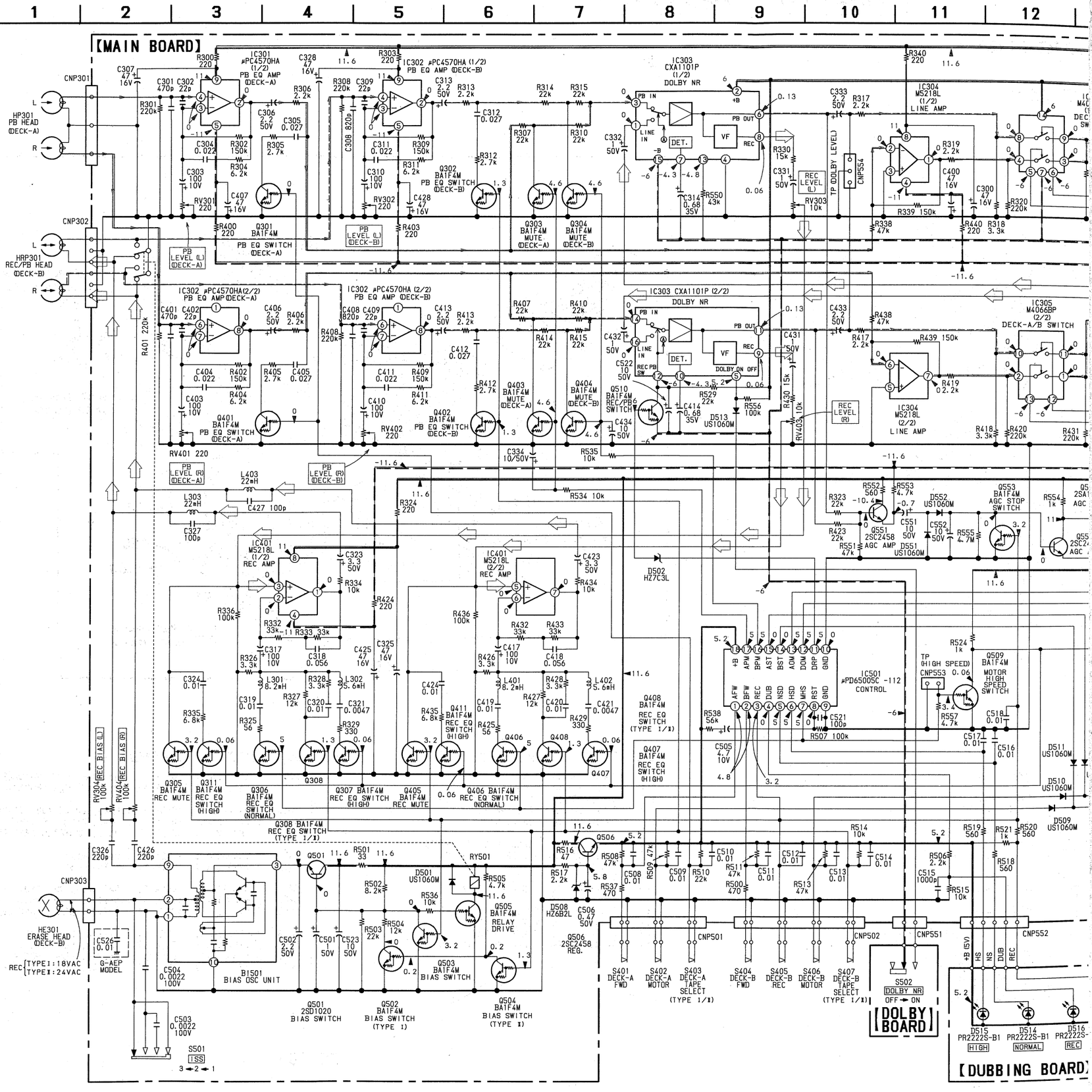
• ■ : part mounted on the conductor side.

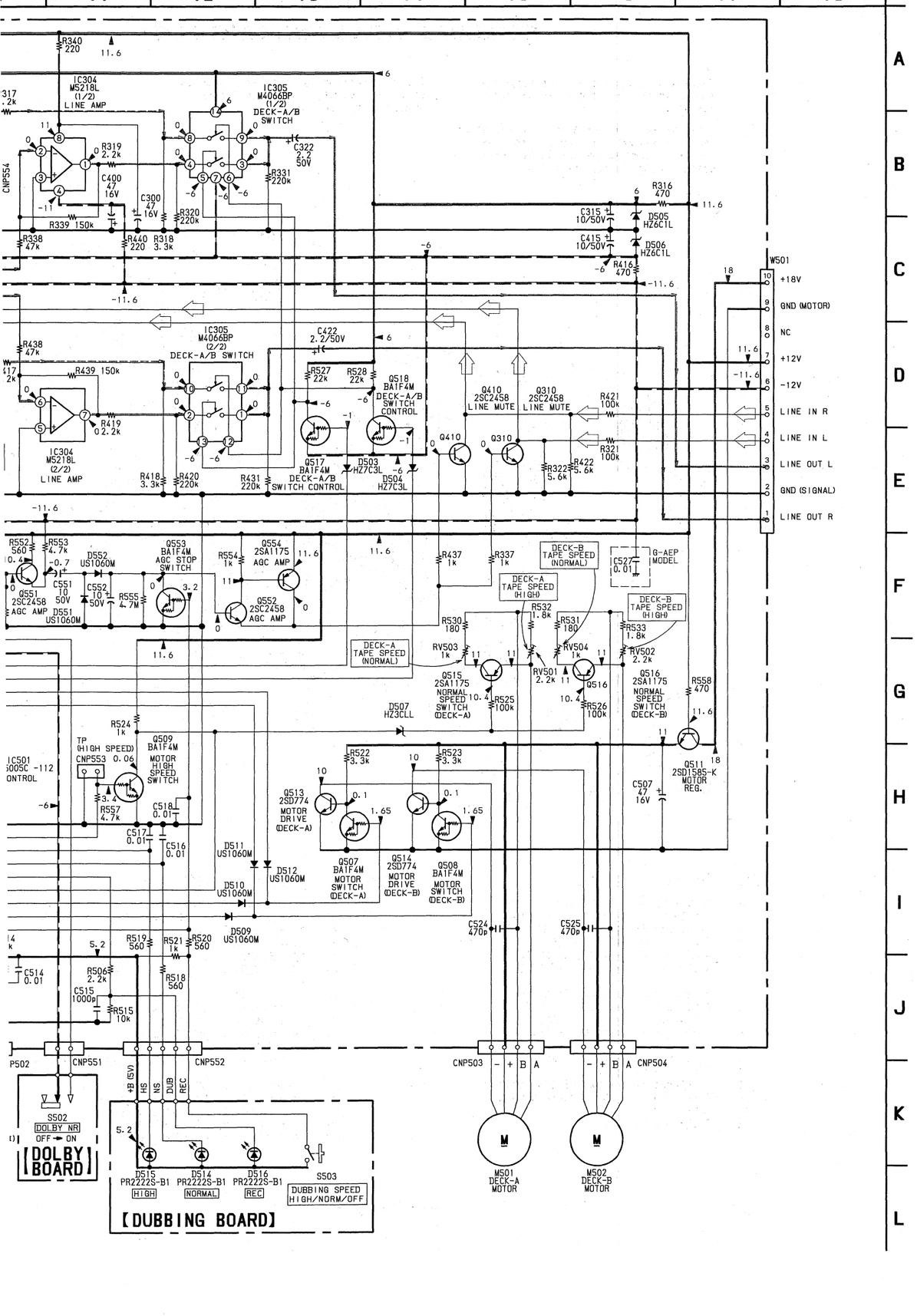



W501
10 +18V
9 GND(MOTOR)
8 NC
7 +12V
6 −12V
5 LINE IN R
4 LINE IN L
3 LINE OUT L
2 GND(SIGNAL)
1 LINE OUT R
G-AEP MODEL
C527 TO CHASSIS
M502 DECK-B MOTOR
M501 DECK-A MOTOR
S401 DECK-A FWD
S402 DECK-A MOTOR B+
S403 DECK-A TAPE SELECT (TYPE I/II)
S407 DECK-B TAPE SELECT (TYPE I/II)
S406 DECK-B MOTOR B+
S405 DECK-B REC
S404 DECK-B FWD
(CHASSIS)
IC303
IC305
IC304
IC401
IC302
IC301
IC501
CN504
CN503
CN501
CN502
CN302
CN301
CN552
CNP554
CNP553
RY501


W501
10 +18V
9 GND(MOTOR)
8 NC
7 +12V
6 −12V
5 LINE IN R
4 LINE IN L
3 LINE OUT L
2 GND(SIGNAL)
1 LINE OUT R
G-AEP MODEL
C527 TO CHASSIS
M502 DECK-B MOTOR
M501 DECK-A MOTOR
S401 DECK-A FWD
S402 DECK-A MOTOR B+
S403 DECK-A TAPE SELECT (TYPE I/II)
(CHASSIS)
S407 DECK-B TAPE SELECT (TYPE I/II)
S406 DECK-B MOTOR B+
S405 DECK-B REC
S404 DECK-B FWD
IC303
IC305
IC304
IC401
IC302
IC301
IC501
CN554
CN553
CN552
CN503
CN504
CN501
CN502
CN301
CN302
RY501

2-2. SCHEMATIC DIAGRAM



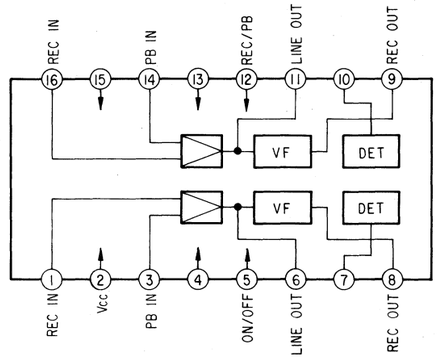


Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ▬▶▬ : PLAYBACK signal path (DECK-A)
- ▬▶▬ : PLAYBACK signal path (DECK-B)
- ⇨ : RECORD signal path
- ▬▬ : B+ bus.
- - - - : B- bus.
- ▭ : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).
  no mark: STOP mode
- Voltage variations may be noted due to normal production tolerances.
- Switches:

Ref. No.	Switch	Position
S501	ISS	1
S502	DOLBY NR	OFF
S503	DUBBING SPEED HIGH/NORM/OFF	OFF
S504	DECK-A FWD	OFF
S505	DECK-A MOTOR	OFF
S506	DECK-A TAPE SELECT I/II	OFF
S507	DECK-B FWD	OFF
S508	DECK-B MOTOR	OFF
S509	DECK-B TAPE SELECT I/II	OFF
S510	DECK-B REC	OFF

IC303 CXA1101P



TC-211W

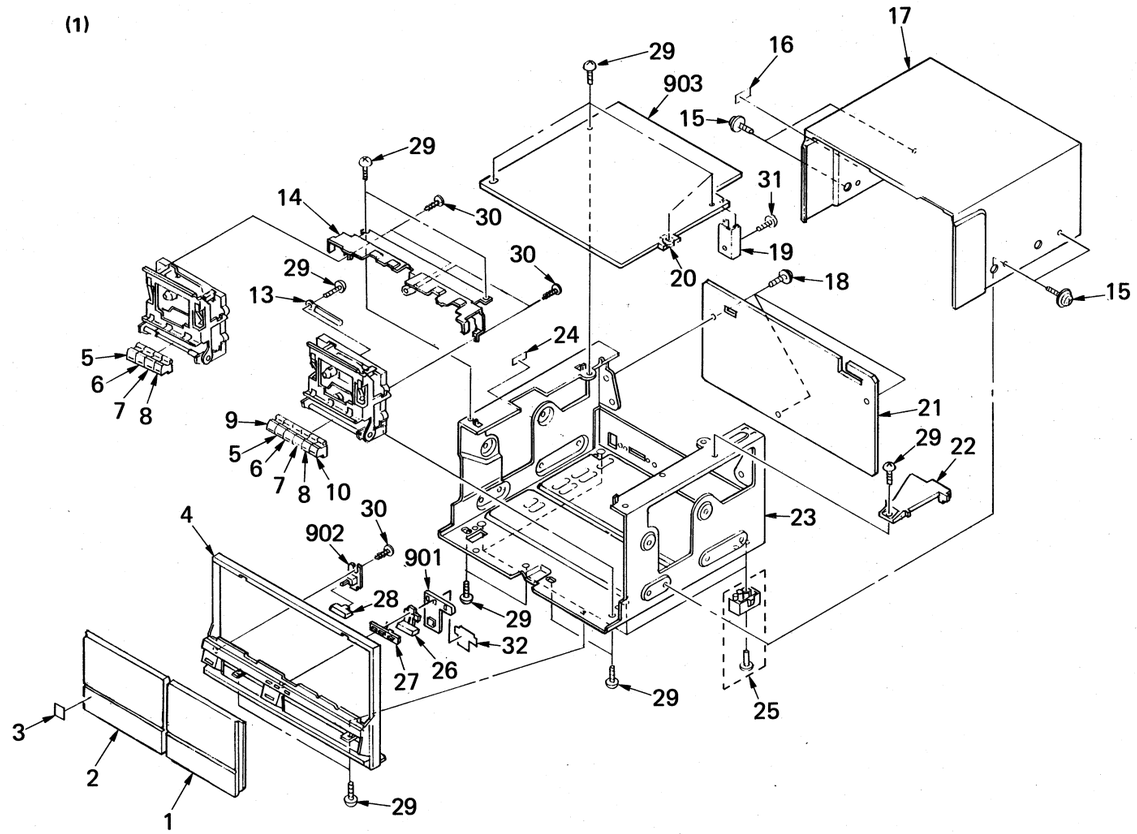
SECTION 3
EXPLODED VIEWS AND PARTS LIST

NOTE:
The mechanical parts with no reference number in the exploded views are not supplied.

· Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

· The construction parts of an assembled part are indicated with a collation number in the remark column.

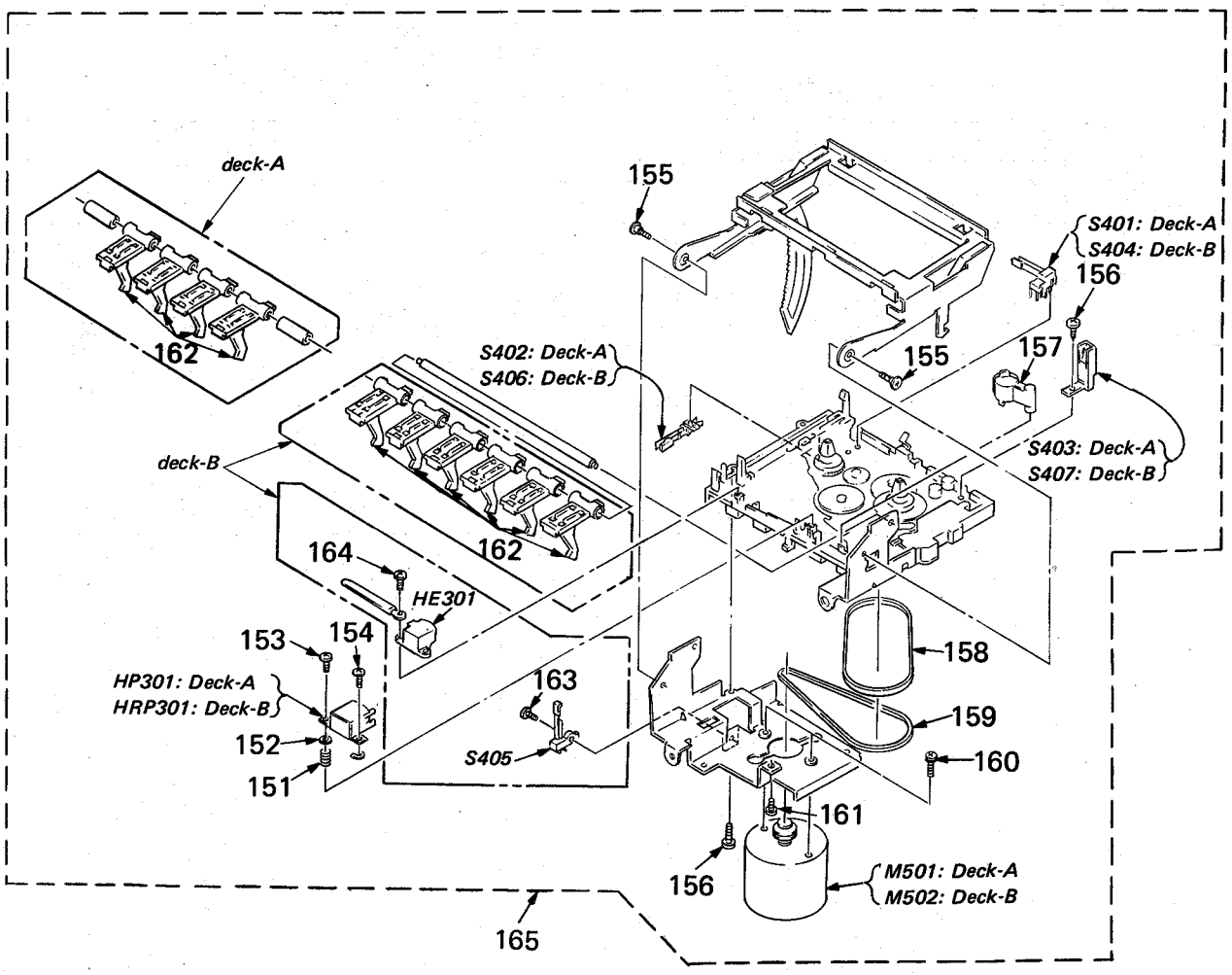
(1)



No.	Part No.	Description	Remarks
1	X-4919-629-1	LID (B) ASSY, CASSETTE	
2	X-4919-618-1	LID (A) ASSY, CASSETTE	
3	3-703-713-41	STICKER, SONY SYMBOL (10)	
4	4-920-821-01	PANEL, FRONT	
5	4-920-814-01	BUTTON, CASSETTE	
6	4-920-814-11	BUTTON, CASSETTE	
7	4-920-814-21	BUTTON, CASSETTE	
8	4-920-814-31	BUTTON, CASSETTE	
9	4-920-814-41	BUTTON, CASSETTE	
10	4-920-814-51	BUTTON, CASSETTE	
13	3-701-822-00	HOLDER, WIRE	
14	*4-920-819-01	JOINT	
15	4-886-821-21	SCREW, M3 CASE STOPPER	
16	*4-920-816-01	LABEL, MODEL NUMBER	
17	4-920-818-01	CASE	
18	2-383-566-00	SCREW	

No.	Part No.	Description	Remarks
19	*4-880-403-21	HEAT SINK	
20	4-870-539-00	PLATE, GROUND	
21	*4-920-820-01	PLATE, JACK	
22	*4-920-817-01	HOLDER, WIRE	
23	*4-920-822-01	CHASSIS	
24	3-701-030-00	LABEL, SERIAL NUMBER	
25	X-4902-937-1	FOOT ASSY, RUBBER	
26	4-920-811-01	BUTTON, DUBBING	
27	4-919-698-01	INDICATOR	
28	4-920-810-01	BUTTON, DOLBY	
29	7-682-147-01	SCREW +BVTT 3X6 (S)	
30	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
31	7-682-148-01	SCREW +BVTT 3X8 (S)	
32	*4-920-836-01	SHEET, INSULATING	
901	*1-622-668-11	PC BOARD, DUBBING	
902	*1-622-667-11	PC BOARD, DOLBY	
903	*A-2095-611-A	MOUNTED PCB, MAIN	

(2)



No.	Part No.	Description	Remarks
151	4-894-955-01	C SPRING	
152	3-390-823-01	WASHER, F	
153	7-621-905-65	SCREW, TOTSU P 2X8	
154	7-621-255-15	SCREW +P 2X3	
155	3-392-121-01	SCREW, STEP	
156	7-685-133-19	SCREW +P 2.6X6 TYPE1	
157	3-390-805-01	ROLLER ASSY, PINCH	
158	3-390-807-01	BELT	
159	3-390-816-01	BELT, SQUARE	
160	7-628-253-90	SCREW +PS 2.6X4	
161	7-682-147-01	SCREW +PTT 3X6 (S)	
162	4-894-971-01	BUTTON LEVER	
163	3-392-102-01	SCREW, D PAN	
164	7-685-781-04	SCREW +PTT 2X4 (S)	

No.	Part No.	Description	Remarks
165	A-2100-381-A	(DECK B)...MD ASSY (TCM-YM47CW-26)	
	A-2100-382-A	(DECK A)...MD ASSY (TCM-YM47CW-27)	
HE301	1-543-261-11	(DECK B)...HEAD, ERASE (886-01-24)	
HP301	1-543-424-11	(DECK A)...HEAD, MAGNETIC (PB)	
HRP301	1-543-424-11	(DECK B)...HEAD, MAGNETIC (REC/PB)	
M501	X-3390-801-1	(DECK A)...MOTOR ASSY	
M502	X-3390-801-1	(DECK B)...MOTOR ASSY	
S401	1-570-716-11	(DECK A)...SWITCH, LEAF (FWD)	
S402	1-570-715-11	(DECK A)...SWITCH, LEAF (MOTOR B+)	
S403	1-571-216-11	(DECK A)...SWITCH, LEAF (TAPE SELECT)	
S404	1-570-716-11	(DECK B)...SWITCH, LEAF (FWD)	
S405	1-571-260-11	(DECK B)...SWITCH, LEAF (REC)	
S406	1-570-715-11	(DECK B)...SWITCH, LEAF (MOTOR B+)	
S407	1-571-216-11	(DECK B)...SWITCH, LEAF (TAPE SELECT)	

SECTION 4
ELECTRICAL PARTS LIST

NOTE:
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*1-622-668-11	PC BOARD, DUBBING			
902	*1-622-667-11	PC BOARD, DOLBY			
903	*A-2095-611-A	MOUNTED PCB, MAIN			
BI501	1-464-797-11	OSCILLATION UNIT, BIAS			
C300	1-123-332-00	ELECT	47MF	20%	16V
C301	1-162-290-31	CERAMIC	470PF	10%	50V
C302	1-162-207-31	CERAMIC	22PF	5%	50V
C303	1-124-443-00	ELECT	100MF	20%	10V
C304	1-130-487-00	MYLAR	0.022MF	5%	50V
C305	1-130-488-00	MYLAR	0.027MF	5%	50V
C306	1-124-925-11	ELECT	2.2MF	20%	50V
C307	1-123-332-00	ELECT	47MF	20%	16V
C308	1-162-293-31	CERAMIC	820PF	10%	50V
C309	1-162-207-31	CERAMIC	22PF	5%	50V
C310	1-124-443-00	ELECT	100MF	20%	10V
C311	1-130-487-00	MYLAR	0.022MF	5%	50V
C312	1-130-488-00	MYLAR	0.027MF	5%	50V
C313	1-124-925-11	ELECT	2.2MF	20%	50V
C314	1-131-346-00	TANTALUM	0.68MF	10%	35V
C315	1-123-875-91	ELECT	10MF	20%	50V
C317	1-124-443-00	ELECT	100MF	20%	10V
C318	1-130-492-11	MYLAR	0.056MF	5%	50V
C319	1-130-483-00	MYLAR	0.01MF	5%	50V
C320	1-130-483-00	MYLAR	0.01MF	5%	50V
C321	1-130-479-00	MYLAR	0.0047MF	5%	50V
C322	1-124-925-11	ELECT	2.2MF	20%	50V
C323	1-124-905-11	ELECT	3.3MF	20%	50V
C324	1-130-483-00	MYLAR	0.01MF	5%	50V
C325	1-123-332-00	ELECT	47MF	20%	16V
C326	1-162-286-31	CERAMIC	220PF	10%	50V
C327	1-162-282-31	CERAMIC	100PF	10%	50V
C328	1-123-332-00	ELECT	47MF	20%	16V
C331	1-124-791-11	ELECT	1MF	20%	50V
C332	1-124-791-11	ELECT	1MF	20%	50V
C333	1-124-925-11	ELECT	2.2MF	20%	50V
C334	1-123-875-91	ELECT	10MF	20%	50V
C400	1-123-332-00	ELECT	47MF	20%	16V
C401	1-162-290-31	CERAMIC	470PF	10%	50V
C402	1-162-207-31	CERAMIC	22PF	5%	50V
C403	1-124-443-00	ELECT	100MF	20%	10V
C404	1-130-487-00	MYLAR	0.022MF	5%	50V
C405	1-130-488-00	MYLAR	0.027MF	5%	50V
C406	1-124-925-11	ELECT	2.2MF	20%	50V
C407	1-123-332-00	ELECT	47MF	20%	16V
C408	1-162-293-31	CERAMIC	820PF	10%	50V
C409	1-162-207-31	CERAMIC	22PF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C410	1-124-443-00	ELECT	100MF	20%	10V
C411	1-130-487-00	MYLAR	0.022MF	5%	50V
C412	1-130-488-00	MYLAR	0.027MF	5%	50V
C413	1-124-925-11	ELECT	2.2MF	20%	50V
C414	1-131-346-00	TANTALUM	0.68MF	10%	35V
C415	1-123-875-91	ELECT	10MF	20%	50V
C417	1-124-443-00	ELECT	100MF	20%	10V
C418	1-130-492-11	MYLAR	0.056MF	5%	50V
C419	1-130-483-00	MYLAR	0.01MF	5%	50V
C420	1-130-483-00	MYLAR	0.01MF	5%	50V
C421	1-130-479-00	MYLAR	0.0047MF	5%	50V
C422	1-124-925-11	ELECT	2.2MF	20%	50V
C423	1-124-905-11	ELECT	3.3MF	20%	50V
C424	1-130-483-00	MYLAR	0.01MF	5%	50V
C425	1-123-332-00	ELECT	47MF	20%	16V
C426	1-162-286-31	CERAMIC	220PF	10%	50V
C427	1-162-282-31	CERAMIC	100PF	10%	50V
C428	1-123-332-00	ELECT	47MF	20%	16V
C431	1-124-791-11	ELECT	1MF	20%	50V
C432	1-124-791-11	ELECT	1MF	20%	50V
C433	1-124-925-11	ELECT	2.2MF	20%	50V
C434	1-123-875-91	ELECT	10MF	20%	50V
C501	1-124-791-11	ELECT	1MF	20%	50V
C502	1-124-925-11	ELECT	2.2MF	20%	50V
C503	1-106-351-00	MYLAR	0.0022MF	10%	100V
C504	1-106-351-00	MYLAR	0.0022MF	10%	100V
C505	1-124-927-11	ELECT	4.7MF	20%	50V
C506	1-124-902-00	ELECT	0.47MF	20%	50V
C507	1-123-332-00	ELECT	47MF	20%	16V
C508	1-161-379-00	CERAMIC	0.01MF	30%	16V
C509	1-161-379-00	CERAMIC	0.01MF	30%	16V
C510	1-161-379-00	CERAMIC	0.01MF	30%	16V
C511	1-161-379-00	CERAMIC	0.01MF	30%	16V
C512	1-161-379-00	CERAMIC	0.01MF	30%	16V
C513	1-161-379-00	CERAMIC	0.01MF	30%	16V
C514	1-161-379-00	CERAMIC	0.01MF	30%	16V
C515	1-162-294-31	CERAMIC	0.001MF	10%	50V
C516	1-161-379-00	CERAMIC	0.01MF	30%	16V
C517	1-161-379-00	CERAMIC	0.01MF	30%	16V
C518	1-161-379-00	CERAMIC	0.01MF	30%	16V
C521	1-162-282-31	CERAMIC	100PF	10%	50V
C522	1-123-875-91	ELECT	10MF	20%	50V
C523	1-123-875-91	ELECT	10MF	20%	50V
C526	1-161-379-00	(G-AEP)...CERAMIC	0.01MF	30%	50V
C527	1-161-379-00	(G-AEP)...CERAMIC	0.01MF	30%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C551	1-123-875-91	ELECT 10MF 20% 50V
C552	1-123-875-91	ELECT 10MF 20% 50V
CNP301*	1-564-506-11	PLUG, CONNECTOR 3P
CNP302*	1-564-509-11	PLUG, CONNECTOR 6P
CNP303*	1-564-505-11	PLUG, CONNECTOR 2P
CNP501*	1-564-509-11	PLUG, CONNECTOR 6P
CNP502*	1-564-511-11	PLUG, CONNECTOR 8P
CNP503*	1-564-507-11	PLUG, CONNECTOR 4P
CNP504*	1-564-507-21	PLUG, CONNECTOR 4P
CNP551*	1-564-336-00	PIN, CONNECTOR 2P
CNP552*	1-564-339-00	PIN, CONNECTOR 5P
CNP553*	1-560-060-00	PIN, CONNECTOR 2P
CNP554*	1-560-061-00	PIN, CONNECTOR 3P
D501	8-719-000-26	DIODE US1060M
D502	8-719-910-75	DIODE HZ7B2L
D503	8-719-910-75	DIODE HZ7B2L
D504	8-719-910-75	DIODE HZ7B2L
D505	8-719-910-68	DIODE HZ6C2L
D506	8-719-910-68	DIODE HZ6C2L
D507	8-719-942-33	DIODE HZ3CLL
D508	8-719-910-65	DIODE HZ6B2L
D509	8-719-000-26	DIODE US1060M
D510	8-719-000-26	DIODE US1060M
D511	8-719-000-26	DIODE US1060M
D512	8-719-000-26	DIODE US1060M
D513	8-719-000-26	DIODE US1060M
D514	8-719-913-36	DIODE PR2222S-B1
D515	8-719-913-36	DIODE PR2222S-B1
D516	8-719-913-36	DIODE PR2222S-B1
D551	8-719-000-26	DIODE US1060M
D552	8-719-000-26	DIODE US1060M
HE301	1-543-261-11	HEAD, ERASE (886-01-24)
HP301	1-543-424-11	HEAD, MAGNETIC (PB)
HRP301	1-543-424-11	HEAD, MAGNETIC (REC/PB)
IC301	8-759-106-61	IC UPC4570HA
IC302	8-759-106-61	IC UPC4570HA
IC303	8-752-031-83	IC CXA1101P
IC304	8-759-600-02	IC M5218L
IC305	8-759-601-43	IC M4066BP
IC401	8-759-600-02	IC M5218L
IC501	8-759-112-88	IC UPD65005C-112
L301	1-410-774-11	MICRO INDUCTOR 8.2MMH
L302	1-410-772-11	MICRO INDUCTOR 5.6MMH
L303	1-410-779-21	MICRO INDUCTOR 22MMH

ELECTRICAL PARTS

Ref.No.	Part No.	Description
L401	1-410-774-11	MICRO INDUCTOR 8.2MMH
L402	1-410-772-11	MICRO INDUCTOR 5.6MMH
L403	1-410-779-21	MICRO INDUCTOR 22MMH
M501	X-3390-801-1	MOTOR ASSY
M502	X-3390-801-1	MOTOR ASSY
Q301	8-729-806-34	TRANSISTOR 2SC3400
Q302	8-729-806-34	TRANSISTOR 2SC3400
Q303	8-729-806-34	TRANSISTOR 2SC3400
Q304	8-729-806-34	TRANSISTOR 2SC3400
Q305	8-729-806-34	TRANSISTOR 2SC3400
Q306	8-729-806-34	TRANSISTOR 2SC3400
Q307	8-729-806-34	TRANSISTOR 2SC3400
Q308	8-729-806-34	TRANSISTOR 2SC3400
Q310	8-729-600-27	TRANSISTOR 2SC634SP
Q311	8-729-806-34	TRANSISTOR 2SC3400
Q401	8-729-806-34	TRANSISTOR 2SC3400
Q402	8-729-806-34	TRANSISTOR 2SC3400
Q403	8-729-806-34	TRANSISTOR 2SC3400
Q404	8-729-806-34	TRANSISTOR 2SC3400
Q405	8-729-806-34	TRANSISTOR 2SC3400
Q406	8-729-806-34	TRANSISTOR 2SC3400
Q407	8-729-806-34	TRANSISTOR 2SC3400
Q408	8-729-806-34	TRANSISTOR 2SC3400
Q410	8-729-600-27	TRANSISTOR 2SC634SP
Q411	8-729-806-34	TRANSISTOR 2SC3400
Q501	8-729-100-13	TRANSISTOR 2SC2001
Q502	8-729-806-34	TRANSISTOR 2SC3400
Q503	8-729-806-34	TRANSISTOR 2SC3400
Q504	8-729-806-34	TRANSISTOR 2SC3400
Q505	8-729-806-34	TRANSISTOR 2SC3400
Q506	8-729-600-27	TRANSISTOR 2SC634SP
Q507	8-729-806-34	TRANSISTOR 2SC3400
Q508	8-729-806-34	TRANSISTOR 2SC3400
Q509	8-729-806-34	TRANSISTOR 2SC3400
Q510	8-729-806-34	TRANSISTOR 2SC3400
Q511	8-729-107-26	TRANSISTOR 2SD1585-K
Q513	8-729-117-43	TRANSISTOR 2SD774
Q514	8-729-117-43	TRANSISTOR 2SD774
Q515	8-729-117-54	TRANSISTOR 2SA1175
Q516	8-729-117-54	TRANSISTOR 2SA1175
Q517	8-729-806-34	TRANSISTOR 2SC3400
Q518	8-729-806-34	TRANSISTOR 2SC3400
Q551	8-729-600-27	TRANSISTOR 2SC634SP
Q552	8-729-600-27	TRANSISTOR 2SC634SP
Q553	8-729-806-34	TRANSISTOR 2SC3400
Q554	8-729-117-54	TRANSISTOR 2SA1175

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R300	1-249-409-11	CARBON	220	5%	1/6W
R301	1-247-887-00	CARBON	220K	5%	1/4W
R302	1-247-883-00	CARBON	150K	5%	1/4W
R303	1-249-409-11	CARBON	220	5%	1/6W
R304	1-215-440-00	CARBON	6.2K	5%	1/6W
R305	1-249-422-11	CARBON	2.7K	5%	1/6W
R306	1-249-421-11	CARBON	2.2K	5%	1/6W
R307	1-249-433-11	CARBON	22K	5%	1/6W
R308	1-247-887-00	CARBON	220K	5%	1/4W
R309	1-247-883-00	CARBON	150K	5%	1/4W
R310	1-249-433-11	CARBON	22K	5%	1/6W
R311	1-215-440-00	CARBON	6.2K	5%	1/6W
R312	1-249-422-11	CARBON	2.7K	5%	1/6W
R313	1-249-421-11	CARBON	2.2K	5%	1/6W
R314	1-249-433-11	CARBON	22K	5%	1/6W
R315	1-249-433-11	CARBON	22K	5%	1/6W
R316	1-249-413-11	CARBON	470	5%	1/6W
R317	1-249-421-11	CARBON	2.2K	5%	1/6W
R318	1-249-423-11	CARBON	3.3K	5%	1/6W
R319	1-249-421-11	CARBON	2.2K	5%	1/6W
R320	1-247-887-00	CARBON	220K	5%	1/4W
R321	1-249-441-11	CARBON	100K	5%	1/6W
R322	1-247-849-00	CARBON	5.6K	5%	1/6W
R323	1-249-433-11	CARBON	22K	5%	1/6W
R324	1-249-409-11	CARBON	220	5%	1/6W
R325	1-249-402-11	CARBON	56	5%	1/6W
R326	1-249-423-11	CARBON	3.3K	5%	1/6W
R327	1-249-430-11	CARBON	12K	5%	1/6W
R328	1-249-423-11	CARBON	3.3K	5%	1/6W
R329	1-249-411-11	CARBON	330	5%	1/6W
R330	1-249-431-11	CARBON	15K	5%	1/6W
R331	1-247-887-00	CARBON	220K	5%	1/4W
R332	1-249-435-11	CARBON	33K	5%	1/6W
R333	1-249-435-11	CARBON	33K	5%	1/6W
R334	1-249-429-11	CARBON	10K	5%	1/6W
R335	1-249-427-11	CARBON	6.8K	5%	1/6W
R336	1-249-441-11	CARBON	100K	5%	1/6W
R337	1-249-417-11	CARBON	1K	5%	1/6W
R338	1-249-437-11	CARBON	47K	5%	1/6W
R339	1-247-883-00	CARBON	150K	5%	1/6W
R340	1-249-409-11	CARBON	220	5%	1/6W
R400	1-249-409-11	CARBON	220	5%	1/6W
R401	1-247-887-00	CARBON	220K	5%	1/4W
R402	1-247-883-00	CARBON	150K	5%	1/4W
R403	1-249-409-11	CARBON	220	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R404	1-215-440-00	CARBON	6.2K	5%	1/6W
R405	1-249-422-11	CARBON	2.7K	5%	1/6W
R406	1-249-421-11	CARBON	2.2K	5%	1/6W
R407	1-249-433-11	CARBON	22K	5%	1/6W
R408	1-247-887-00	CARBON	220K	5%	1/4W
R409	1-247-883-00	CARBON	150K	5%	1/4W
R410	1-249-433-11	CARBON	22K	5%	1/6W
R411	1-215-440-00	CARBON	6.2K	5%	1/6W
R412	1-249-422-11	CARBON	2.7K	5%	1/6W
R413	1-249-421-11	CARBON	2.2K	5%	1/6W
R414	1-249-433-11	CARBON	22K	5%	1/6W
R415	1-249-433-11	CARBON	22K	5%	1/6W
R416	1-249-413-11	CARBON	470	5%	1/6W
R417	1-249-421-11	CARBON	2.2K	5%	1/6W
R418	1-249-423-11	CARBON	3.3K	5%	1/6W
R419	1-249-421-11	CARBON	2.2K	5%	1/6W
R420	1-247-887-00	CARBON	220K	5%	1/4W
R421	1-249-441-11	CARBON	100K	5%	1/6W
R422	1-247-849-00	CARBON	5.6K	5%	1/6W
R423	1-249-433-11	CARBON	22K	5%	1/6W
R424	1-249-409-11	CARBON	220	5%	1/6W
R425	1-249-402-11	CARBON	56	5%	1/6W
R426	1-249-423-11	CARBON	3.3K	5%	1/6W
R427	1-249-430-11	CARBON	12K	5%	1/6W
R428	1-249-423-11	CARBON	3.3K	5%	1/6W
R429	1-249-411-11	CARBON	330	5%	1/6W
R430	1-249-431-11	CARBON	15K	5%	1/6W
R431	1-247-887-00	CARBON	220K	5%	1/4W
R432	1-249-435-11	CARBON	33K	5%	1/6W
R433	1-249-435-11	CARBON	33K	5%	1/6W
R434	1-249-429-11	CARBON	10K	5%	1/6W
R435	1-249-427-11	CARBON	6.8K	5%	1/6W
R436	1-249-441-11	CARBON	100K	5%	1/6W
R437	1-249-417-11	CARBON	1K	5%	1/6W
R438	1-249-437-11	CARBON	47K	5%	1/6W
R439	1-247-883-00	CARBON	150K	5%	1/4W
R440	1-249-409-11	CARBON	220	5%	1/6W
R500	1-249-413-11	CARBON	470	5%	1/6W
R501	1-249-399-11	CARBON	33	5%	1/6W
R502	1-249-428-11	CARBON	8.2K	5%	1/6W
R503	1-249-433-11	CARBON	22K	5%	1/6W
R504	1-249-430-11	CARBON	12K	5%	1/6W
R505	1-249-425-11	CARBON	4.7K	5%	1/6W
R506	1-249-421-11	CARBON	2.2K	5%	1/6W
R507	1-249-441-11	CARBON	100K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R508	1-249-437-11	CARBON	47K	5%	1/6W
R509	1-249-437-11	CARBON	47K	5%	1/6W
R510	1-249-433-11	CARBON	22K	5%	1/6W
R511	1-249-437-11	CARBON	47K	5%	1/6W
R513	1-249-437-11	CARBON	47K	5%	1/6W
R514	1-249-429-11	CARBON	10K	5%	1/6W
R515	1-249-429-11	CARBON	10K	5%	1/6W
R516	1-249-401-11	CARBON	47	5%	1/6W
R517	1-249-421-11	CARBON	2.2K	5%	1/6W
R518	1-249-414-11	CARBON	560	5%	1/6W
R519	1-249-414-11	CARBON	560	5%	1/6W
R520	1-249-414-11	CARBON	560	5%	1/6W
R521	1-249-417-11	CARBON	1K	5%	1/6W
R522	1-249-423-11	CARBON	3.3K	5%	1/6W
R523	1-249-423-11	CARBON	3.3K	5%	1/6W
R524	1-249-417-11	CARBON	1K	5%	1/6W
R525	1-249-441-11	CARBON	100K	5%	1/6W
R526	1-249-441-11	CARBON	100K	5%	1/6W
R527	1-249-433-11	CARBON	22K	5%	1/6W
R528	1-249-433-11	CARBON	22K	5%	1/6W
R529	1-249-433-11	CARBON	22K	5%	1/6W
R530	1-249-408-11	CARBON	180	5%	1/6W
R531	1-249-408-11	CARBON	180	5%	1/6W
R532	1-249-420-11	CARBON	1.8K	5%	1/6W
R533	1-249-420-11	CARBON	1.8K	5%	1/6W
R534	1-249-429-11	CARBON	10K	5%	1/6W
R535	1-249-429-11	CARBON	10K	5%	1/6W
R536	1-249-429-11	CARBON	10K	5%	1/6W
R537	1-249-413-11	CARBON	470	5%	1/6W
R538	1-249-438-11	CARBON	56K	5%	1/6W
R550	1-215-460-00	CARBON	43K	5%	1/6W
R551	1-249-437-11	CARBON	47K	5%	1/6W
R552	1-249-414-11	CARBON	560	5%	1/6W
R553	1-249-425-11	CARBON	4.7K	5%	1/6W
R554	1-249-417-11	CARBON	1K	5%	1/6W
R555	1-202-471-00	SOLID	4.7M	5%	1/4W
R556	1-249-441-11	CARBON	100K	5%	1/6W
R557	1-249-425-11	CARBON	4.7K	5%	1/6W
R558	1-249-413-11	CARBON	470	5%	1/6W

ELECTRICAL PARTS

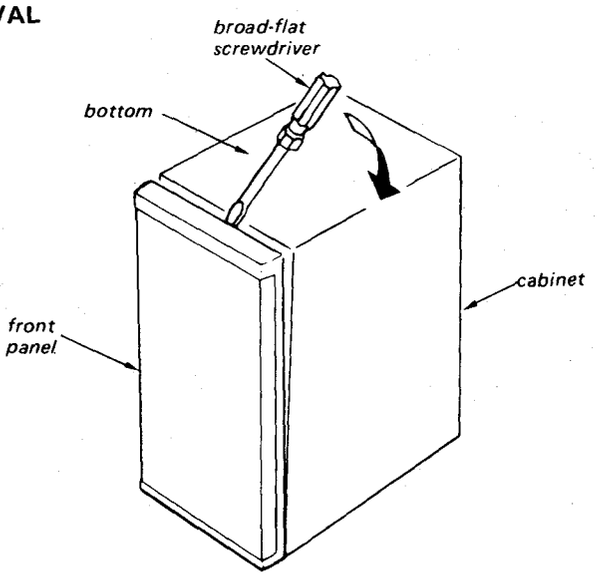
Ref.No.	Part No.	Description
RV301	1-230-504-11	RES, ADJ, CARBON 220
RV302	1-230-504-11	RES, ADJ, CARBON 220
RV303	1-230-630-11	RES, ADJ, CARBON 10K
RV304	1-228-997-00	RES, ADJ, CARBON 100K
RV401	1-230-504-11	RES, ADJ, CARBON 220
RV402	1-230-504-11	RES, ADJ, CARBON 220
RV403	1-230-630-11	RES, ADJ, CARBON 10K
RV404	1-228-997-00	RES, ADJ, CARBON 100K
RV501	1-228-991-00	RES, ADJ, CARBON 2.2K
RV502	1-228-991-00	RES, ADJ, CARBON 2.2K
RV503	1-228-990-00	RES, ADJ, CARBON 1K
RV504	1-228-990-00	RES, ADJ, CARBON 1K
RY501	1-515-529-11	RELAY
S401	1-570-716-11	SWITCH, LEAF (FWD)
S402	1-570-715-11	SWITCH, LEAF (MOTOR B+)
S403	1-570-216-11	SWITCH, LEAF (TAPE SELECT)
S404	1-571-716-11	SWITCH, LEAF (FWD)
S405	1-571-260-11	SWITCH, LEAF (REC)
S406	1-570-715-11	SWITCH, LEAF (MOTOR B+)
S407	1-571-216-11	SWITCH, LEAF (TAPE SELECT)
S501	1-516-870-00	SWITCH, SLIDE (ISS)
S502	1-554-419-21	SWITCH, PUSH (1 KEY)(DOLBY NR)
S503	1-554-371-00	SWITCH, TACT (DUBBING SPEED HIGH/NORM/OFF)
W501	1-559-278-11	CORD (WITH CONNECTOR) 10P

FH-207
FH-211W
FH-215R

SPEAKER SYSTEM
(APM-215)

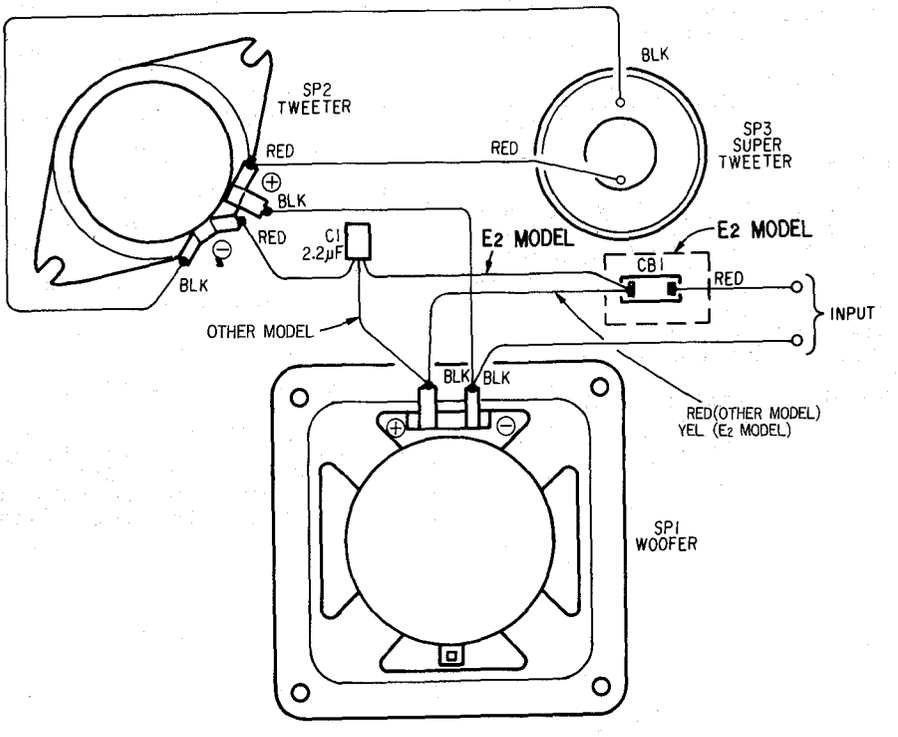
US Model
AEP Model
UK Model
E Model

1. DISASSEMBLY
FRONT PANEL REMOVAL



Note: Be careful not to scratch the cabinet.

2. WIRING DIAGRAM



3. EXPLODED VIEW AND PARTS LIST

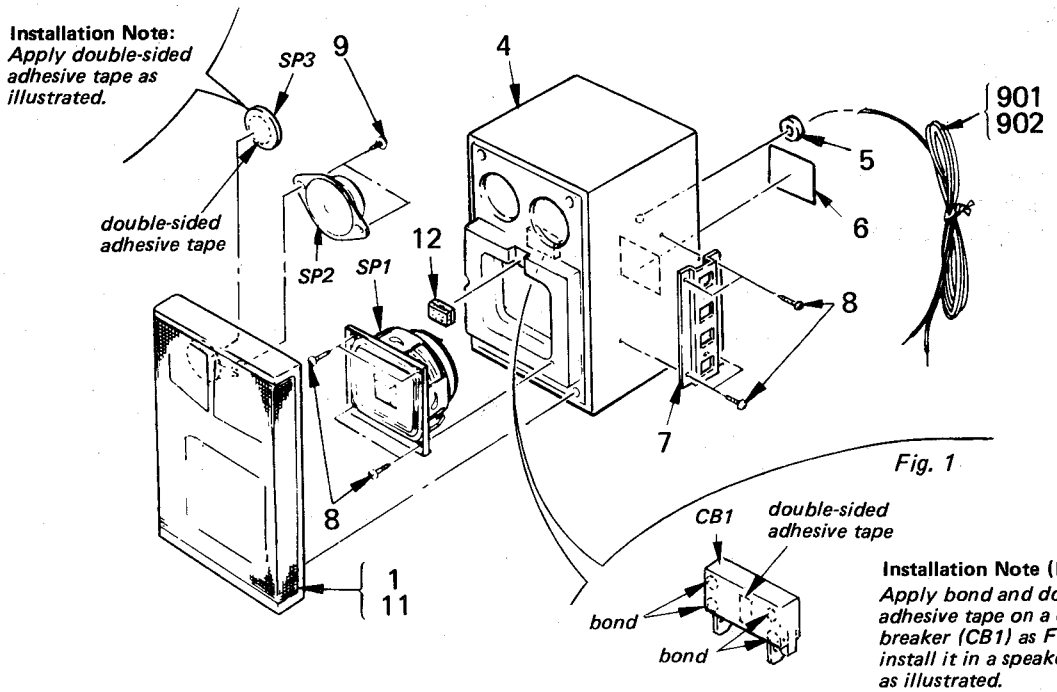


Fig. 1

Installation Note (E2 model only):
Apply bond and double-sided adhesive tape on a circuit breaker (CB1) as Fig. 1 and install it in a speaker cabinet as illustrated.

No.	Part No.	Description	Remarks
1	X-4910-093-1	(US,AEP,UK)....PANEL(LEFT) ASSY, FRONT	
	X-4910-096-1	(E2,E3,Saudi Arabia) ...PANEL(LEFT) ASSY, FRONT	
4	X-4910-301-1	(US,AEP,UK,E2,E3,Saudi Arabia) ...CABINET ASSY, SPEAKER	
	X-4910-306-1	(G-AEP).....CABINET ASSY, SPEAKER	
5	4-870-003-00	CLIPPER, CORD	
6	*4-920-129-01	(E2).....LABEL, MODEL NUMBER	
	*4-920-130-01	(AEP,UK).....LABEL, MODEL NUMBER	
	*4-920-131-01	(E3,Saudi Arabia)...LABEL, MODEL NUMBER	
	*4-920-174-01	(US).....LABEL, MODEL NUMBER	
7	4-920-144-01	PLATE (B), SIDE	
8	4-874-614-11	SCREW (4) (3.5X14), TAPPING	
9	7-685-646-79	SCREW +BVTP 3X8 TYPE2 SLIT	
11	X-4910-094-1	(US,AEP,UK)...PANEL(RIGHT) ASSY, FRONT	
	X-4910-095-1	(E2,E3,Saudi Arabia) ...PANEL(RIGHT) ASSY, FRONT	
12	*4-920-140-01	PACKING	

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	1-559-268-11	(AEP,UK,E3,Saudi Arabia) ....CORD, SPEAKER (A)
	1-559-269-11	(E2).....CORD, SPEAKER (B)
	1-559-443-11	(US).....CORD, SPEAKER (D)
902	1-559-270-11	(E2)...CORD, SPEAKER (C) (YEL)
C1	1-123-544-00	ELECT 2.2MF 20% 50V
CB1	1-532-665-00	(E2)...CIRCUIT BREAKER (1.8A)
SP1	1-503-796-11	(US,AEP,UK)...SPEAKER (090A011)
SP1	1-503-794-11	(E2,E3,Saudi Arabia) ...SPEAKER (090A010)
SP2	1-503-795-11	SPEAKER, CONE (5CM)
SP3	1-529-053-11	BUZZER

ACCESSORY & PACKING MATERIAL

3-701-690-00	(UK)...LABEL (MADE IN JAPAN)
3-769-112-11	(UK)...MANUAL, INSTRUCTION
4-920-121-01	(UK)...CUSHION
4-920-150-01	(UK)...INDIVIDUAL CARTON
4-920-151-01	(UK)...SHEET, PROTECTION